

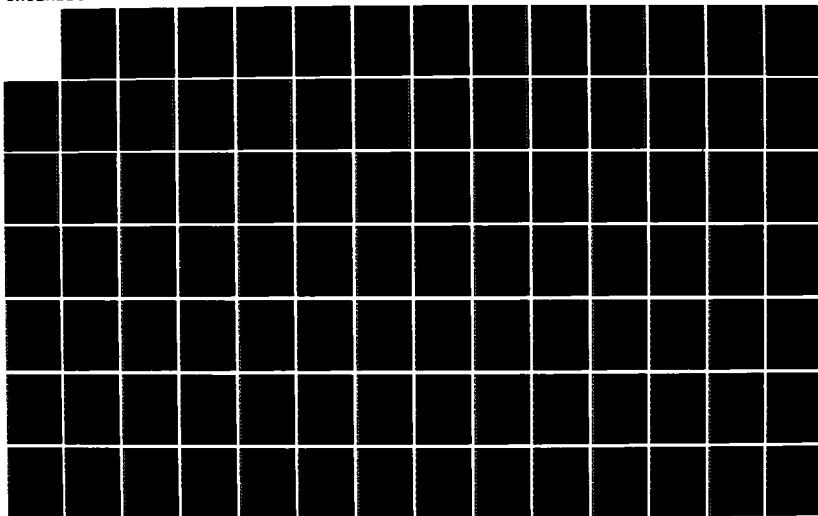
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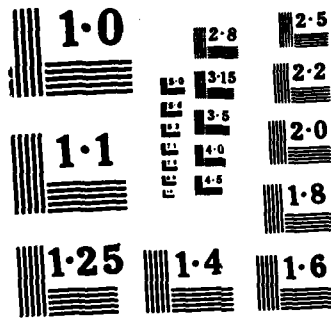
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MARGINAL ICE ZONE EXPERIMENT - 1984

PHYSICAL OCEANOGRAPHY REPORT:

USNS LYNCH and HELICOPTER-BASED STD DATA

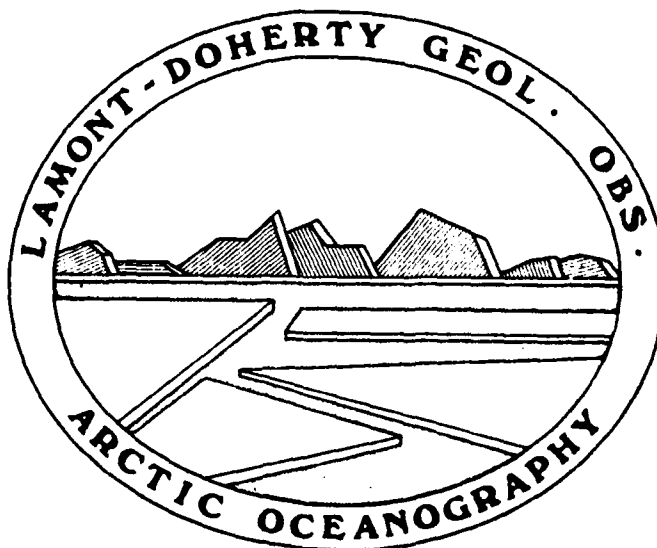
by T.O. Manley

TECHNICAL REPORT

LDGO - 85 - 7

Department of the Navy
Office of Naval Research
Contract N00014-84-C-0132

December 1985



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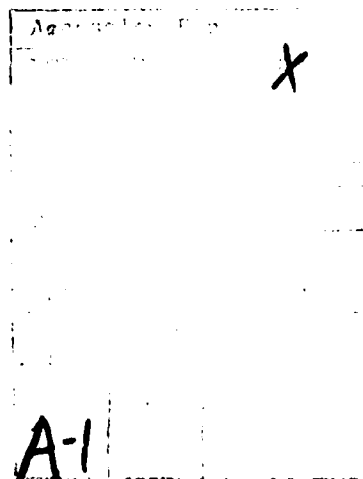
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Lamont-Doherty Geological Observatory
of Columbia University
Palisades, New York 10964-0190

December 1985

TABLE of CONTENTS

	<u>PAGE</u>
ABSTRACT.....	iii
LIST of FIGURES.....	iv
LIST of TABLES.....	iv
INTRODUCTION.....	1
PHYSICAL OCEANOGRAPHY PROGRAM.....	4
C/STD DATA PROCESSING.....	8
Helicopter-based 302s.....	8
USNS <u>Lynch</u> CTD.....	9
C/STD CALIBRATION.....	10
OUTPUT FORMAT of FINAL DATA.....	11
ACKNOWLEDGMENTS.....	16
REFERENCES.....	17
STD DATA.....	18



ABSTRACT

During the summer of 1984, the Arctic Oceanography Department of Lamont-Geological Observatory acquired a total of 222 helicopter-based C/STD stations within the ice-covered region of the Fram Strait to a nominal depth of 500 m. This program was accomplished as part of an international experiment known as MIZEX East 1984. The two ships used in helicopter operations, the F/S Polarstern and the M/V Polarqueen.

The USNS Lynch was also used to obtain 26 CTD stations from two separate legs into the Fram Strait. The first leg primarily consisted of an open water transect of the strait at a latitude of 79°N. Stations were typically taken to within 10 m of the bottom and extended from the ice edge onto the shelf of Svalbard. The second leg was more acoustically oriented and confined to the southern region of the Yermak Plateau. During this leg, 11 stations to a nominal depth of 450 m were taken.

Standard level listings of temperature, potential temperature, salinity, sigma-t, specific volume anomaly, dynamic height, and sound velocity are given for each cast along with profiles of temperature, salinity and sigma-t.

This technical report outlines the acquisition and basic reduction techniques of these data.

LIST OF FIGURES

PAGE

1. Positions of the 222 helicopter-based C/STD stations in Fram Strait. Of these, several were taken on board ship as part of intercalibration procedures. Contours show bottom topography in kilometers.....3

LIST OF TABLES

PAGE

1. Definitions and meanings of abbreviated terms for station header listings.....12
2. Definitions and meanings of abbreviated terms for standard level listings.....13

INTRODUCTION

The Fram Strait, located between Greenland and Spitzbergen, is a region of intense interaction between the ice-covered, cooler and less saline waters that exit the Arctic Ocean as the southward flowing East Greenland Current and the inflowing warmer and more saline water from the Atlantic which moves northward as the West Spitzbergen Current.

The transitional region between the open ocean and the more stable interior sea-ice can be loosely defined as the marginal ice zone (MIZ), however, the interpretation of this definition depends largely on the time and space scales over which specific processes occur. These processes can range from global climatic variations that operate over time and space scales from tens to thousands of years and millions of square kilometers, to more local dynamics of air-sea-ice interaction that last for a few days and are confined to regions of less than a hundred square kilometers. Because of the large reflective properties of sea ice to incoming solar radiation, the marginal ice zones can play an important role in local climate conditions, as well as climatological patterns of the world (Barry, 1983). For example, over the course of an average year, the difference between the minimum and maximum areal extent of sea ice for both the Arctic and Antarctic is roughly 10 million square kilometers or 2% of the earth's surface (Nazarov, 1963).

Unfortunately, these regions still remain poorly understood, and questions relating to the dominant or controlling forces that determine the position of the ice edge, associated feedback mechanisms, and the importance of mesoscale processes in the transfer of heat, salt, momentum, and biomass within the MIZ are only a few areas that need to be answered in these highly dynamic and specialized regions. As a result, two major scientific programs, known as the Marginal Ice Zone Experiments (MIZEX) East and West, were initi-

ated in the Arctic regions of the Fram Strait and the Bering Sea, respectively.

Mesoscale activity definitely plays an important role in the transfer of heat, salt, and momentum, across the frontal boundaries set up by these differing water masses.

Smith et al. (1985) have recently indicated that these processes may also be important in biomass exchange across the front. Based on satellite imagery of the open ocean near ice edge zones, mesoscale activity has been shown to be ubiquitous (Vinje; 1977a, 1977b). Unfortunately, these features have been rarely observed in close detail by hydrographic surveys in the open ocean area of the Fram Strait, and even fewer observations are recorded beneath the ice-covered regions of the Arctic Ocean and MIZ.

To help carry out these needed investigations over the open and ice-covered parts of the marginal ice zone, the Lamont group obtained C/STD data from the open water ship USNS Lynch, as well as from helicopters based on the Norwegian M/V Polarqueen and the West German icebreaker F/S Polarstern (Fig. 1). In many cases these helicopter surveys were closely coordinated with open water STD surveys.

During the time period from mid-May to mid-July, the Lamont group acquired a total of 248 CTD stations within this region. Twenty-six of these were open-water stations taken during two separate legs of the USNS Lynch which was equipped with a Neil Brown CTD system. The first leg was primarily used for mooring deployments, recoveries, and a CTD transect of the strait from the local ice-edge ($\sim 0^\circ$ longitude) to the shelf of Svalbard along a constant latitude of 79°N . The first 3 CTD stations were mooring-related and did not necessarily penetrate to the bottom, however, the remaining 12 transect stations extended to within 10 m of the bottom.

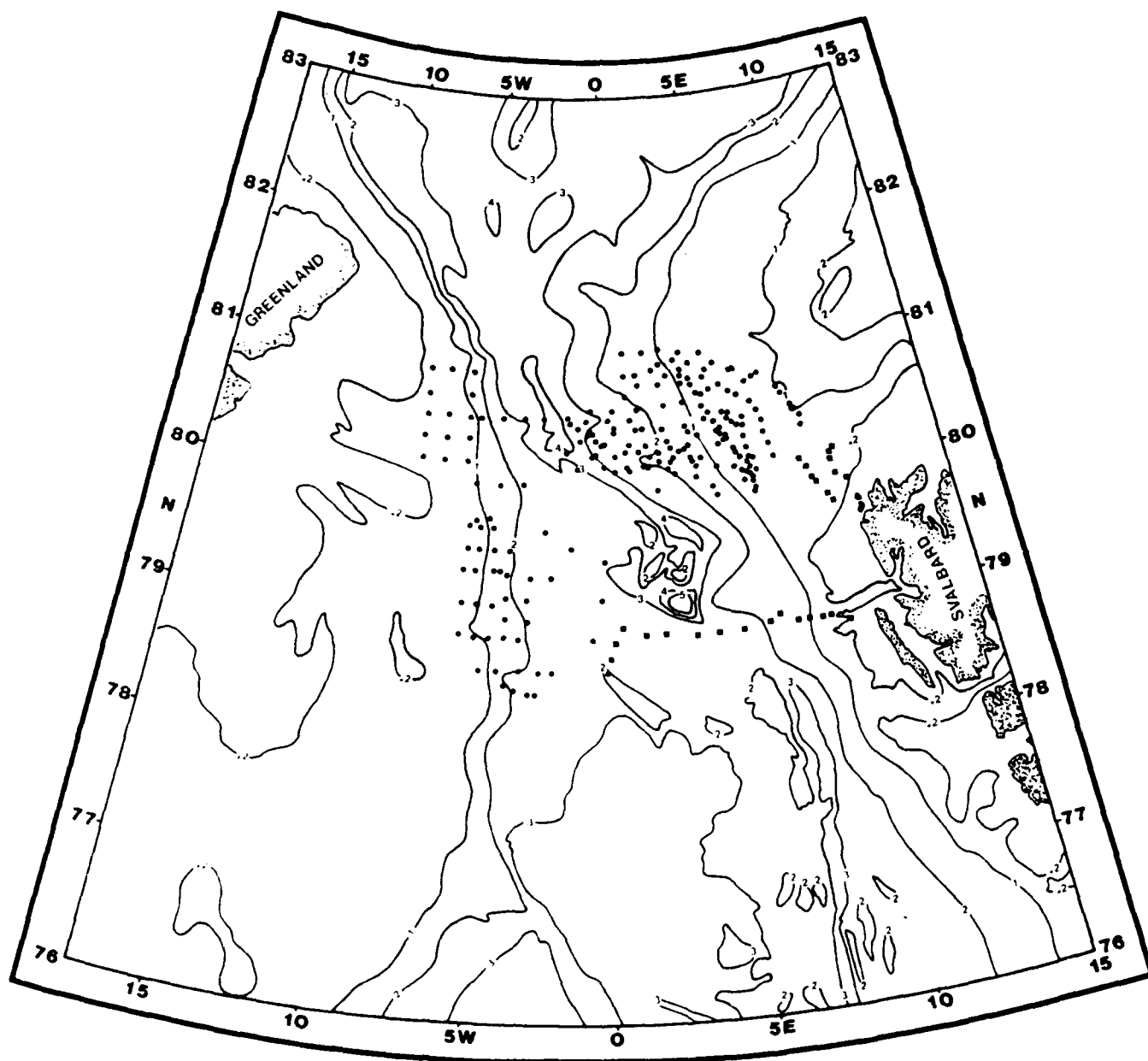


Figure 1 - Positions of the 222 helicopter-based C/STD stations (dots) in Fram Strait. Of these, several were taken on board ship as part of intercalibration procedures. Positions of 26 Lynch stations (squares) are also shown. Contours show bottom topography in kilometers.

The second leg of the USNS Lynch dealt primarily with acoustical oceanography, and as a result only 11 CTD stations were taken. All of these were taken to a nominal depth of 450 m and were located over the southern part of the Yermak Plateau.

PHYSICAL OCEANOGRAPHY PROGRAM

As the second part of a multi-year experiment in the Marginal Ice Zone of the Fram Strait (MIZEX 84 East), seven ships (the USNS Lynch, M/V Polarqueen, M/S Hakon Mosby, M/V Kvitbjorn, F/S Polarstern, F/S Valdivia, and the H/U Overdrup), along with eight remote sensing aircraft, one meteorological aircraft and four helicopters were used to begin a set of air, sea, and ice observations to better define the role of mesoscale dynamics in the MIZ (Johannessen and Horn, 1984).

In order to better define the upper layer hydrography of the interior regions of the pack ice where ship mobility became very difficult, as well as to support the continuation of open water ship-based CTD transect lines into the ice, high-resolution, internally recording, helicopter-based C/STD systems (model 302A) manufactured by Ocean Data Equipment were used extensively from the F/S Polarstern and M/V Polarqueen. Three of the helicopters used in the field were Bell 206B Jet Rangers, while the fourth (based on the F/S Polarstern) was an AéroSpécial Twin Star.

The underwater unit itself was small (1 m x 13 cm in diameter), lightweight (20 kg), completely self-contained, and possessed digital resolution of .002 mS/cm, .001°C, and .1 db for conductivity, temperature, and pressure, respectively. Temperature, conductivity, and pressure data were serially stored in a one megabit solid state memory using a constant sampling rate of

5 scans per second. After the completion of a given station, data was transferred to cassette tapes via a battery operated reader/recorder unit. The cassette data were reviewed at the site to verify a good cast, as well as to check for specific horizons of temperature and salinity, before flying to the next station.

During a normal field day, 8 to 10 pre-selected locations (comprising a survey) were occupied in the MIZ. Station depths were nominally set at 500 m. These stations took approximately 8 hours to complete, although such factors as inter-station distance, distance from the ship, depth of station, selected survey pattern, and ice conditions could alter this time by ± 3 hours. A C/STD station to 500 m depth normally took 40 minutes to complete, while transit time in helicopter to the next location (4-10 nautical miles (nm)) was typically 10 minutes. Two of the major factors controlling flight operations in this area were weather conditions and radio communications.

Station position was determined by three different methods: 1) radar transponder, 2) Omega/VLF, and 3) dead reckoning. In surveys where stations were close to the ship and accuracy was required, the helicopter was tracked on the ship's radar via a radar transponder mounted on the helicopter and tuned to the correct frequency. This method was employed quite successfully during the first part of the experiment. At distances around 40 nm, relative positions were good to ± 100 meters. At shorter distances, less than 10 nm, the fixes were good to ± 10 's of meters. When fog was a problem transponders were also used in guiding the helicopter back to the ship.

Omega/VLF, on the other hand, allows more flexibility of the helicopter since longer flights away from the ship can be made and not as many shipboard personnel are required. Accuracy of Omega/VLF in this area of the globe depends on the number of sending stations being monitored by the on board computer but will be generally within ± 150 meters.

Occasionally during a survey the Omega/VLF system on board the helicopter lost the necessary number of transmitting stations required for proper functioning. In these cases, it was much better to navigate using dead reckoning techniques from the point of last valid position. This took into consideration the ground speed and heading of the helicopter (air velocity minus estimated wind velocity) and the time required to get from one point in the survey grid to another. Although not as acceptable as Omega/VLF, it was by far the best method when all else failed. Error estimates for this type of navigation are given to ± 300 m and reflects the typical errors encountered when returning to the ship, which had known position.

After the desired position was obtained, the closest available floe with good deployment and landing characteristics was selected. This selection typically took place from altitudes of 1,000 - 3,000 feet which were necessary for radio communications from the ship. If the desired position was not acceptable because of bad ice edge conditions or its location in the middle of a large multiyear floe, then the first available site for deployment within the immediate vicinity was chosen. The pilot provided a closer survey of the floe, and if still acceptable, landed after the most up-to-date position was recorded.

The sonde was lowered and raised at two different rates, 20 m/min in the upper 200 meters where extreme gradients in temperature and conductivity were found, and 30 m/min from 200 to 500 m where gradients were much less severe. The slower rate near the surface was used primarily to obtain more acceptable results in the calculated salinity profile where rapidly changing fine structure and extreme gradients can frequently cause spiking due to the variation in the response times of the individual sensors. After transferring data to cassette and verifying the quality of the data, the Omega/VLF system (if used) was reinitialized to the latitude and longitude prior to landing. Because the

Omega/VLF could not successfully lock onto stations while on the ice, several hundred feet of altitude had to be obtained. Site position was entered into the navigation system as the final flyby over the site was made subsequent to the system acquiring the minimum number of Omega and VLF transmitting stations.

Subsequent C/STD stations in the survey were completed depending upon the weather, radio communications, and occasionally a refueling of the helicopter on board ship. After completion of the survey, temperature and salinity profiles were made for each station using an X-Y-Y analog plotter while on board the ship. These profiles were merged with other existing data sets in order to provide a better understanding of the oceanographic features present at that time and to provide a base upon which to set up future surveys.

When time and operations permitted, the deck unit was used to transfer the cassette data to a Hewlett-Packard 1000 series computer for storage on 9-track tape. The deck unit software was designed to mimic the output data stream of the Neil Brown deck unit. This allowed the use of existing acquisition software developed by Woods Hole Oceanographic Institution for Neil Brown STDs to be used on the Hewlett-Packard computer. The resulting 9-track tape can be reduced on other computers using data reduction programs in common use by the oceanographic community.

This conversion to 9-track tapes at sea not only obviates the need to bring all of the cassettes immediately back to the institution, but also speeds up the processing time.

A more detailed account of the helicopter-based C/STD systems, both electro-mechanical and field operations, are given by Manley and Perti (1984).

Between June 12 and July 17, 222 helicopter-based C/STD stations comprising several major surveys were completed as far as 100 km away from the mother ships (Fig. 1). Twenty of these stations were taken on board ship in

conjunction with Neil Brown stations for inter-calibration purposes. On the other hand, the USNS Lynch was not ice-strengthened, and as a result was restricted entirely to the open water. The ship was equipped with an up-to-date Neil Brown data acquisition system consisting of a Mark IIIB Neil Brown underwater unit, and a model 1150 Neil Brown deck unit which was integrated with a Digi data 9-track recorder. Also associated with the CTD system was a reel-to-reel audio recorder and an HP 98 series acquisition/plotter combination. Salinity samples were taken with a General Oceanics 12-bottle rosette system which was mounted directly above the Neil Brown CTD. Analysis of the salinity bottles was accomplished on the shipboard Guildline Autosol within 10 days of the sample acquisition.

C/STD DATA PROCESSING

Helicopter-based 302s

Since pre- and post-cruise calibrations of the helicopter units (completed at Northwest Regional Calibration center, NWRCC) showed no significant deviations in either pressure, temperature or conductivity, no precursory calibrations were required before the processing of the data.

Temperature lag coefficients, τ , for each sensor were, however, required prior to decimation. This was accomplished by intercomparing the up and downtraces of random stations throughout the entire data set using different time constants. Best fit for a given station was determined when the ascending and descending parts of the cast on a T-S diagram were nearly congruent. From these comparisons it was determined that the best overall fits occurred when τ was set at 0.31 and 0.27 seconds for the Polarstern and Polarqueen helicopter CTDs, respectively.

Raw data from each instrument were decimated into a uniform pressure series (1.0 db) using a linear interpolation scheme with a window of 7 scans centered around the desired level.

Irregularities or spikes in the decimated data were then subjectively removed. In most cases these were single points that were taken out and did not interrupt the uniform pressure series. Occasionally, segments of data would have to be removed and would either be replaced by interpolated data or left alone. These decisions were again subjective and depended largely on the local conductivity and temperature structure.

At the same time, the upper 2-4 meters of data (estimated thickness of the ice) were automatically removed from each station. This was done to prevent misinterpretations of the results which were attributable to the methodology of taking the station (i.e., through seal holes or off the edge of a floe).

USNS Lynch CTD

Although there were various formats used for recording the Neil Brown CTD data, only the digital 9-track output and the reel-to-reel audio tapes were used. Unfortunately, 5 of the 26 stations recorded in the digital format proved to be useless due to recorder problems. As a result, audio tapes were used to reconstruct these stations back into 9-track data. Even though some of the audio tapes produced noisy data, subsequent processing cleared up most of these problems.

Although not typically done in Neil Brown CTD data processing, the initial decimation of the data to 1.0 db intervals was made via an eleven point average centered around the desired level. This was due to the

formatting and processing control between the Neil Brown CTD-produced data tapes and that of the specialized processing software requiring CTD78 formatted tapes.

As mentioned earlier, the stations reproduced via audio conversion to 9-track were somewhat noisy. In order to smooth these data and be consistent with the remainder of the stations, a 5 point Gaussian filter was employed on all of the decimated data. Post-processing irregularities or spikes in the data were handled in a similar way as that of the helicopter-based C/STD data.

C/STD CALIBRATION

As mentioned earlier, preliminary calibration for each of the instruments was obtained from pre-cruise and post-cruise calibrations. Helicopter units were calibrated at NWRCC (Seattle WA), while the Neil Brown unit on board the Lynch was calibrated at the NORDA facility in Bay St. Louis, MS.

Bottle data provided the final calibration for the salinity data. In the case of the Lynch data, this was the final step before the production of the data report, however, the helicopter-based C/STDs required one more calibration process in order to fine-tune all of the data to that of the Neil Brown CTD data obtained during the Polarqueen and Polarstern intercalibration stations. Since the same salinity samples were used for calibration of the Neil Brown and ODEC CTDs, no further calibration was required on this data. Pressure deviations also proved to be within specification for both instruments and hence was not readjusted. Temperature deviations, even though very slight (less than 0.005°C), were taken into consideration and adjusted accordingly in order to produce the final results contained within this technical report.

OUTPUT FORMAT OF FINAL DATA

Output of the final data is provided in three different formats consisting of 1) station headers, 2) standard level listings, and 3) profiles of temperature, salinity and sigma-t (T, S, σ_t) versus depth.

Station header listings provide a quick glance section of all the basic station information and are found directly in front of each data section for the USNS Lynch and helicopter-based C/STDs. The information contained within these listings includes the consecutive station number; the ship from which the data was taken, or for helicopter data, the ship from which the helicopter was based; the day, month, year, corresponding julian day of the start of the station; the minimum and maximum depths contained within the profile; and finally, the station position and associated position errors. Table 2 defines more explicitly the meanings and abbreviations used in the station header listings.

In general, two profiles of T, S, σ_t are graphically shown on one page of the data report. On the facing page, the corresponding standard level listings of the station are shown. The standard level data consist of the parameters relating to the station, and in some cases are abbreviated to save space. The meanings of these abbreviated terms are given in Table 2.

TABLE 1DEFINITIONS AND MEANINGS OF ABBREVIATED TERMSFOR STATION HEADER LISTINGS

CAMP	Project Identifier
SH	Ship from which data was taken, or if helicopter data, ship on which helicopter was based: PQ = <u>Polarqueen</u> PS = <u>Polarstern</u> LY = <u>Lynch</u>
STAT	CTD Station Number
MODE	1 implies downtrace 2 implies uptrace
DAY	Day of Station
MON	Month of Station
YR	Year of Station
TIME	GMT Time of Station
CODE	Processing Code, see Table 2
JULDAY	Julian Day (decimal) of station (1.0 = 1 Jan 1984)
D.MIN	Minimum Depth (meters) of station
D.MAX	Maximum Depth (meters) of station
LATITUDE	Latitude of station in decimal degrees
LONGITUDE	Longitude of station in decimal degrees (+ indicates East Longitude) (- indicates West Longitude)
LAT.ERR	Error of Latitude Position in meters
LNG.ERR	Error of Longitude Position in meters

TABLE 2

DEFINITIONS AND MEANINGS OF ABBREVIATED TERMS FOR STANDARD LEVEL LISTINGS

Station xxx (y)	Station number (xxx) and mode of trace (y) where:
CTD	Station taken with CTD y = 1 indicates downtrace y = 2 indicates uptrace
GMT	Times shown are Greenwich Mean Time
Code = I	Processing Code where if I =
	A) 1 -> 5 profile contains both temperature and salinity data.
	1) data from magnetic tape
	2) data from manual digitization of analog charts
	3) filtered in salinity only
	4) filtered in temperature only
	5) filtered in both temperature and salinity
	B) 11 -> 13 profile is in salinity only
	11) data from magnetic tape
	12) data from manual digitization of analog charts
	13) filtered
	C) 21 -> 23 profile in temperature only
	21) data from magnetic tape
	22) data from manual digitization of analog charts
	23) filtered
LAT	Latitude in decimal degrees N (North)
LONG	Longitude in decimal degrees W (West), E (East)
LTER	Estimate of positional error for latitude in meters
LGER	Estimate of positional error for longitude in meters
AIR TEMP	Air temperature in deg. C (0 implies no data)
BAROM	Barometric pressure in millibars (0 implies no data)
WIND	Wind direction in degrees true north (0 implies no data)
SPEED	Wind speed in meters/sec (0 implies no data)

TABLE 2 (continued)

LISTING PARAMETERS

DEPTH	Depth in meters
TEMP	Temperature in degrees C
PTEMP	Potential temperature in degrees C
SALIN	Salinity in parts per thousand
SIG T	Sigma-t density where: density (gm/cm^3) = $1.0 ((\text{Sig T}) * 1000.0)$
SPVOL	Specific volume anomaly ($\times 10^{-5} \text{cm}^3/\text{gm}$)
DYNHT	Dynamic height (dynamic meters)
SOUND	Sound velocity in meters/sec calculated from Matthews equation

The main body of the numerical listings consists of values of temperature, potential temperature, salinity, sigma-t (σ_t), specific volume anomaly, dynamic height and sound velocity against various interpolated levels of depth. Since upper surface layer data may be omitted from the data set (ice thickness removal), surface (0 m) values of temperature and salinity are duplicated from the first data seen in the cast. The actual first and last levels of the data are shown as the first value below the depth of 0.0 meters and the last value of the listing, respectively.

Corresponding profiles of temperature, salinity and sigma-t for each standard level listing are shown on the facing page. The label at the end of each trace (T,S, σ_t) indicates the parameter of temperature, salinity and sigma-t, respectively. Scales at the upper part of the diagram are labeled to correspond to the parameters and are also shifted with respect to one another to provide the maximum amount of clarity of the traces. Depth is in meters. Station identification and data are in the lower left hand corner in the following format:

MIZEX 84 (or LYNCH) STN-MOD
MONTH - DAY - YEAR

where

STN is the station number
MOD is the mode (1 = downtrace)
 (2 = uptrace)

Those stations having depths greater than 700 m are placed on a single page. The corresponding profiles are broken up into an expanded 0 to 700 m plot on the left side, which is consistent with all other profiles in the report, as well as the 0 to 4000 m plot which shows the remainder of the data and can be used to intercompare other deep stations, if desired.

ACKNOWLEDGMENTS

The field work was supported by the Office of Naval Research under contract N00014-76-C-004, while data processing and publication of this report was funded under contract N00014-84-C-0132. My personal thanks to Jay Ardai who helped acquire the USNS Lynch transect data and all of the helicopter data from the M/V Polarqueen. To John Kemp (WHOI), who did an excellent job of collecting the last 11 stations during the second leg of the USNS Lynch, I wish to express my appreciation. Bruce Huber, Dennis Camp and Bill Haines continually helped me with the technical end of data processing. To them, I am gratefully indebted. Last, but not least, I wish to acknowledge the efforts of the helicopter crews on board the M/V Polarqueen and F/S Polarstern for not only flying long hours with Jay and me, but also pitching in and helping go through the rather monotonous and "cold" mechanics of station taking.

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STD DATA

This section is broken up into to color-coded parts that will hopefully aid the user in locating the helicopter-based and USNS Lynch-based data.

The first section (yellow) is the helicopter data obtained from the ships F/S Polarstern and M/V Polarqueen. These stations, although numbered differently in the field, have since been interwoven into a continuous (time sequential) data set.

The USNS Lynch data (second section, in blue), however, was intentionally kept separate from the helicopter data because of data management reasons.

At the beginning of each of the sections, a complete station header listing is given, again to further aid the user in more efficient use of the report. The abbreviated headings and their meanings are given in Table 1.

(SIGMA-T) 23 24 25 26 27 28

CAMP	SH	STAT	MODE	DT	MON	YR	TIME	CUT	JULDAY	0.MIN	0.MAX	LATITUDE	LONGITUDE	LAT.EHR	LONG.EHR
MINNEAPOLIS	PS	71	1	26	JUN	84	939	1	18.4021	4.0	499.0	80.75000	1.10000	300.0	100.0
MINNEAPOLIS	PS	72	1	26	JUN	84	1032	1	18.4389	5.9	506.9	80.75167	1.13133	300.0	100.0
MINNEAPOLIS	PS	73	1	26	JUN	84	1126	1	18.4760	5.9	506.9	81.08333	1.10000	300.0	100.0
MINNEAPOLIS	PS	74	1	26	JUN	84	1223	1	18.5160	6.0	479.2	81.08333	2.06333	300.0	100.0
MINNEAPOLIS	PS	75	1	26	JUN	84	1523	1	18.6757	2.0	482.2	81.10000	2.28333	400.0	400.0
MINNEAPOLIS	PS	76	1	26	JUN	84	1613	1	18.6757	2.0	485.2	80.75000	2.25000	400.0	400.0
MINNEAPOLIS	PS	77	1	26	JUN	84	1704	1	18.7117	3.0	486.2	80.75000	2.25000	400.0	400.0
MINNEAPOLIS	PS	78	1	26	JUN	84	1750	1	18.7742	5.9	491.1	80.75167	2.25000	400.0	400.0
MINNEAPOLIS	PS	79	1	26	JUN	84	1849	1	18.7742	5.9	491.1	80.75000	2.25000	400.0	400.0
MINNEAPOLIS	PS	80	1	27	JUN	84	1902	1	19.3764	19.8	435.4	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	81	1	27	JUN	84	1001	1	19.3764	13.0	435.4	80.75167	1.40000	300.0	100.0
MINNEAPOLIS	PS	82	1	27	JUN	84	1050	1	19.4514	3.9	440.7	80.75850	1.40000	300.0	100.0
MINNEAPOLIS	PS	83	1	27	JUN	84	1145	1	19.4896	4.9	440.7	80.75850	1.40000	300.0	100.0
MINNEAPOLIS	PS	84	1	27	JUN	84	1237	1	19.5295	8.9	527.9	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	85	1	27	JUN	84	1333	1	19.5674	3.0	493.0	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	86	1	27	JUN	84	1433	1	19.6062	2.0	516.8	80.75167	1.40000	300.0	100.0
MINNEAPOLIS	PS	87	1	27	JUN	84	1531	1	19.6465	5.9	493.1	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	88	1	27	JUN	84	1540	1	19.6528	4.9	497.2	80.75167	1.40000	300.0	100.0
MINNEAPOLIS	PS	89	1	27	JUN	84	1625	1	19.6840	2.0	485.2	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	90	1	27	JUN	84	1711	1	19.7140	2.0	485.2	80.75167	1.40000	300.0	100.0
MINNEAPOLIS	PS	91	1	27	JUN	84	1759	1	19.7771	2.0	485.2	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	92	1	27	JUN	84	1839	1	19.7771	4.9	479.0	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	93	1	27	JUN	84	1909	1	19.8464	5.9	479.0	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	94	1	27	JUN	84	1233	1	19.8464	2.0	499.0	80.75167	1.40000	300.0	100.0
MINNEAPOLIS	PS	95	1	27	JUN	84	1319	1	19.8464	2.0	499.0	80.75167	1.40000	300.0	100.0
MINNEAPOLIS	PS	96	1	27	JUN	84	1408	1	19.8464	2.0	499.0	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	97	1	27	JUN	84	1508	1	19.8464	2.0	499.0	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	98	1	27	JUN	84	1607	1	19.8464	2.0	499.0	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	99	1	27	JUN	84	1677	1	19.8464	2.0	499.0	80.75000	1.40000	300.0	100.0
MINNEAPOLIS	PS	100	1	27	JUN	84	1015	1	18.4928	4.9	491.5	80.75250	1.59670	300.0	100.0
MINNEAPOLIS	PS	101	1	27	JUN	84	1109	1	18.4928	4.9	491.5	80.75250	1.59670	300.0	100.0
MINNEAPOLIS	PS	102	1	27	JUN	84	1242	1	18.5292	2.0	519.2	80.75333	1.60000	300.0	100.0
MINNEAPOLIS	PS	103	1	27	JUN	84	1337	1	18.5619	3.5	496.0	80.75417	1.58333	150.0	150.0
MINNEAPOLIS	PS	104	1	27	JUN	84	1428	1	18.5619	4.0	519.2	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	105	1	27	JUN	84	1417	1	18.6027	2.6	519.2	80.75500	1.58333	150.0	150.0
MINNEAPOLIS	PS	106	1	27	JUN	84	1504	1	18.6285	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	107	1	27	JUN	84	1546	1	18.6514	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	108	1	27	JUN	84	1620	1	18.6514	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	109	1	27	JUN	84	1630	1	18.6815	4.0	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	110	1	27	JUN	84	1650	1	18.6815	4.0	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	111	1	27	JUN	84	1729	1	18.7034	2.8	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	112	1	27	JUN	84	1820	1	18.7264	16.8	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	113	1	27	JUN	84	1904	1	18.7454	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	114	1	27	JUN	84	1934	1	18.7944	6.0	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	115	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	116	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	117	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	118	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	119	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	120	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	121	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	122	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	123	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	124	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	125	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	126	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	127	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	128	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	129	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	130	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	131	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	132	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	133	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	134	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	135	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	136	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	137	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	138	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	139	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0
MINNEAPOLIS	PS	140	1	27	JUN	84	1917	1	18.8159	4.9	492.1	80.75000	1.58333	150.0	150.0

CAMP	SH	STAT	MODE	DT	MON	YR	TIME	COORD	JULDAY	D.MIN	D.MAX	LATITUDE	LONGITUDE	LAT.FIN	LONG.FIN
MINE-X-84	PU	141	1	2	JUL	84	10:4	1	184.4333	4.0	49.0	80.58330	5.58330	150.0	150.0
MINE-X-84	PU	142	1	2	JUL	84	11:1	1	184.4460	4.0	49.0	80.53110	6.40000	150.0	150.0
MINE-X-84	PU	143	1	2	JUL	84	11:3	1	184.4593	2.0	58.7	80.48310	6.08330	150.0	150.0
MINE-X-84	PU	144	1	2	JUL	84	13:4	1	184.5333	2.0	58.7	80.48310	6.08330	150.0	150.0
MINE-X-84	PU	145	1	2	JUL	84	13:3	1	184.5646	2.0	49.0	80.41670	5.41670	150.0	150.0
MINE-X-84	PU	146	1	4	JUL	84	9:03	1	186.3371	3.0	49.0	80.38170	5.26330	150.0	150.0
MINE-X-84	PS	147	1	4	JUL	84	9:40	1	186.4028	4.0	53.7	80.29170	1.69170	300.0	300.0
MINE-X-84	PS	148	1	4	JUL	84	10:26	1	186.4347	2.0	53.7	80.29170	1.69170	300.0	300.0
MINE-X-84	PS	149	1	4	JUL	84	10:59	1	186.4576	2.0	53.7	80.24330	2.55000	300.0	300.0
MINE-X-84	PS	150	1	4	JUL	84	11:46	1	186.5003	2.0	53.7	80.19330	2.96500	300.0	300.0
MINE-X-84	PS	151	1	4	JUL	84	12:4	1	186.5167	2.0	53.7	80.14830	3.24830	300.0	300.0
MINE-X-84	PS	152	1	4	JUL	84	13:1	1	186.5549	2.0	53.7	80.17500	3.17500	300.0	300.0
MINE-X-84	PS	153	1	4	JUL	84	13:15	1	186.5833	2.0	53.7	80.22170	1.87000	300.0	300.0
MINE-X-84	PS	154	1	4	JUL	84	14:0	1	186.6472	2.0	53.7	80.17170	1.87000	300.0	300.0
MINE-X-84	PS	155	1	4	JUL	84	15:28	1	187.3886	3.0	49.0	80.17170	4.55330	300.0	300.0
MINE-X-84	PS	156	1	4	JUL	84	16:3	1	187.3986	3.0	49.0	80.42830	4.55330	300.0	300.0
MINE-X-84	PS	157	1	5	JUL	84	10:31	1	187.4382	3.0	49.0	80.42830	4.55330	300.0	300.0
MINE-X-84	PS	158	1	5	JUL	84	11:25	1	187.4806	3.0	49.0	80.34330	5.27670	300.0	300.0
MINE-X-84	PS	159	1	5	JUL	84	12:55	1	187.5174	3.0	50.0	80.25170	4.43830	300.0	300.0
MINE-X-84	PS	160	1	5	JUL	84	13:2	1	187.5565	3.0	50.0	80.35330	3.90330	300.0	300.0
MINE-X-84	PS	161	1	5	JUL	84	19:1	1	188.5665	3.0	50.0	80.46170	3.97500	300.0	300.0
MINE-X-84	PS	162	1	5	JUL	84	10:6	1	188.5847	2.0	49.0	80.46170	3.00000	150.0	150.0
MINE-X-84	PS	163	1	5	JUL	84	11:8	1	188.6347	2.0	49.0	80.31670	3.00000	150.0	150.0
MINE-X-84	PS	164	1	5	JUL	84	12:32	1	188.5908	2.0	49.0	80.24170	3.03330	150.0	150.0
MINE-X-84	PS	165	1	5	JUL	84	13:3	1	188.5833	2.0	49.0	80.24170	3.03330	150.0	150.0
MINE-X-84	PS	166	1	5	JUL	84	15:9	1	188.6382	2.0	49.0	80.31670	2.03330	150.0	150.0
MINE-X-84	PS	167	1	5	JUL	84	15:7	1	188.6115	2.0	49.0	80.31670	2.03330	150.0	150.0
MINE-X-84	PS	168	1	5	JUL	84	17:2	1	188.7797	2.0	49.0	80.21670	1.13330	150.0	150.0
MINE-X-84	PS	169	1	5	JUL	84	17:3	1	188.7797	2.0	49.0	80.21670	1.13330	150.0	150.0
MINE-X-84	PS	170	1	5	JUL	84	17:5	1	189.4454	2.0	49.0	80.33330	1.05000	150.0	150.0
MINE-X-84	PS	171	1	5	JUL	84	18:27	1	189.4454	2.0	49.0	80.33330	1.05000	150.0	150.0
MINE-X-84	PS	172	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	173	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	174	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	175	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	176	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	177	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	178	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	179	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	180	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	181	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	182	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	183	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	184	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	185	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	186	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	187	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	188	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	189	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	190	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	191	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	192	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	193	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	194	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	195	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	196	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	197	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	198	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	199	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	200	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	201	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	202	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	203	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	204	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	205	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	206	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	207	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	208	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	209	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0
MINE-X-84	PS	210	1	5	JUL	84	18:56	1	189.5247	2.0	49.0	78.50170	3.09670	300.0	300.0

CAMP	SH	STAT	MODE	DAY	MON	YR	TIME	CODE	JULDAY	D.MIN	D.MAX	LATITUDE	LONGITUDE	LAT.ERR	LONG.ERR
MIZEXX-84	PU	211	1	12	JUL	84	1231	1	194.5215	2.0	498.0	80.46670	-0.66670	400.0	400.0
MIZEXX-84	PU	212	1	12	JUL	84	1321	1	194.5263	2.0	499.0	80.41500	-0.25000	400.0	400.0
MIZEXX-84	PU	213	1	12	JUL	84	1409	1	194.5396	2.0	495.1	80.37500	-0.03330	400.0	400.0
MIZEXX-84	PU	214	1	12	JUL	84	1455	1	194.5415	2.0	489.2	80.31500	-0.25000	400.0	400.0
MIZEXX-84	PS	215	1	13	JUL	84	1804	1	194.5415	2.0	602.6	79.79930	-5.62020	30.0	30.0
MIZEXX-84	PS	216	1	13	JUL	84	1822	1	195.3509	2.0	292.9	79.81870	-4.87120	30.0	30.0
MIZEXX-84	PS	217	1	13	JUL	84	1719	1	196.3509	2.0	142.4	79.72350	-2.47420	30.0	30.0
MIZEXX-84	PS	218	1	15	JUL	84	1223	1	197.5190	14.9	492.1	79.60230	-1.36910	30.0	30.0
MIZEXX-84	PS	219	1	15	JUL	84	1101	1	198.0592	2.0	592.8	79.20830	-0.13330	30.0	30.0
MIZEXX-84	PS	220	1	16	JUL	84	1011	1	198.0424	2.0	592.8	79.20830	-0.00330	30.0	30.0
MIZEXX-84	PS	221	1	17	JUL	84	608	1	199.3389	2.0	647.0	79.45670	0.01800	30.0	30.0
MIZEXX-84	PU	222	1	17	JUL	84	848	1	199.3667	5.9	497.1	80.17170	5.06170	30.0	30.0

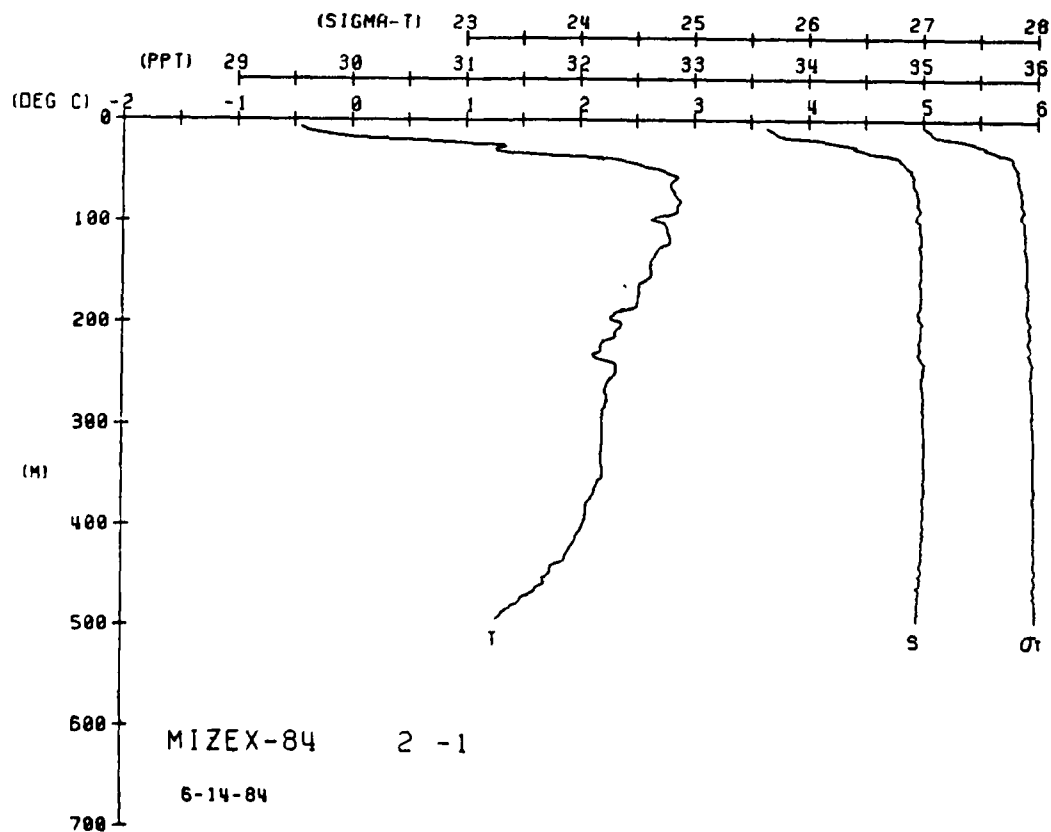
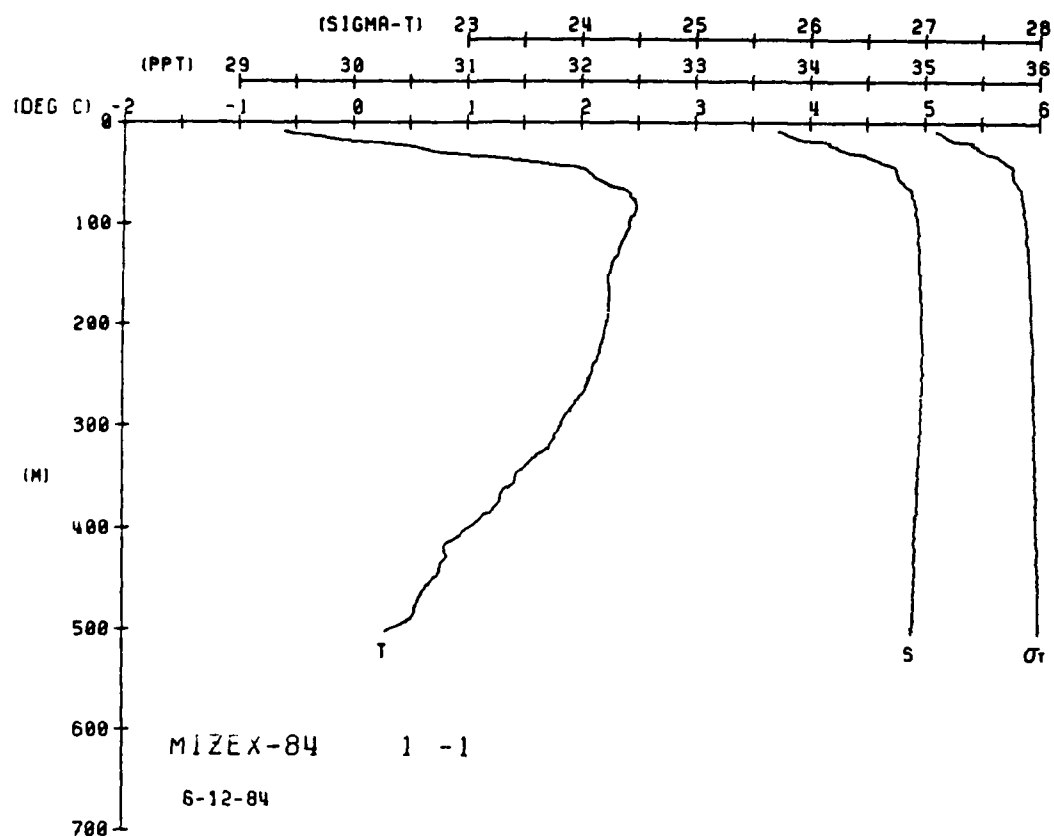
STD DATA

This section provides all of the helicopter-based STD data taken during MIZEX 84. The numerical listing and corresponding plots are given.

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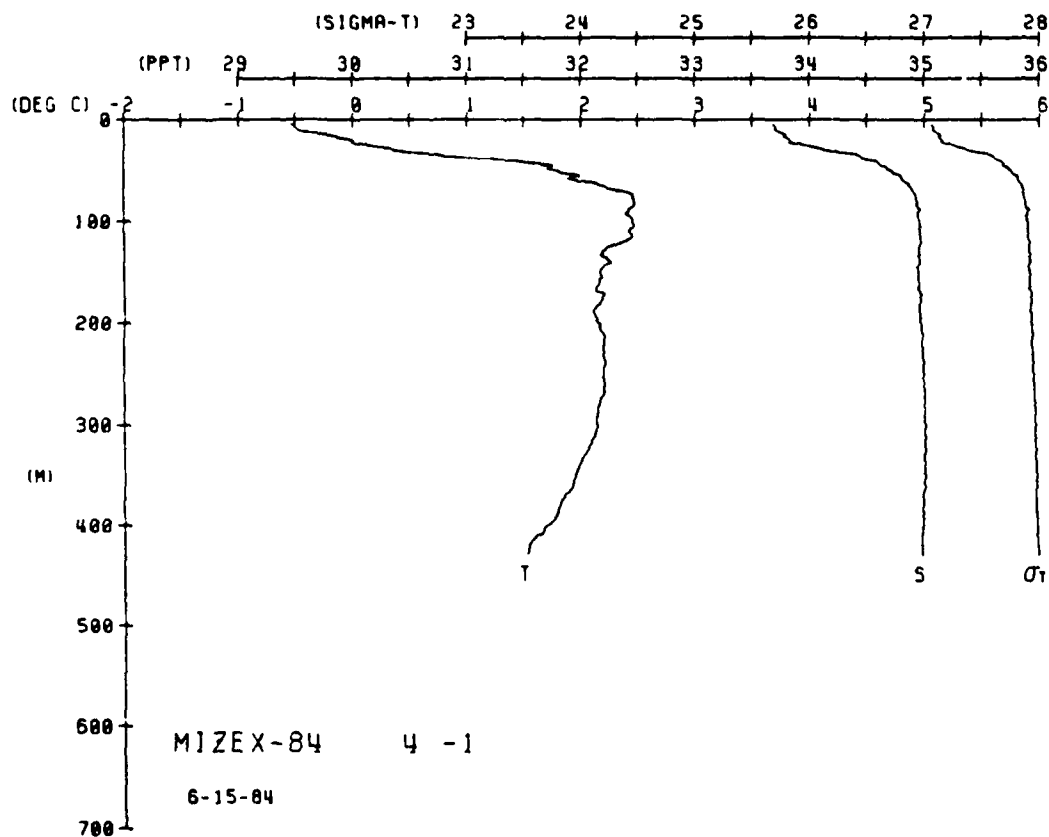
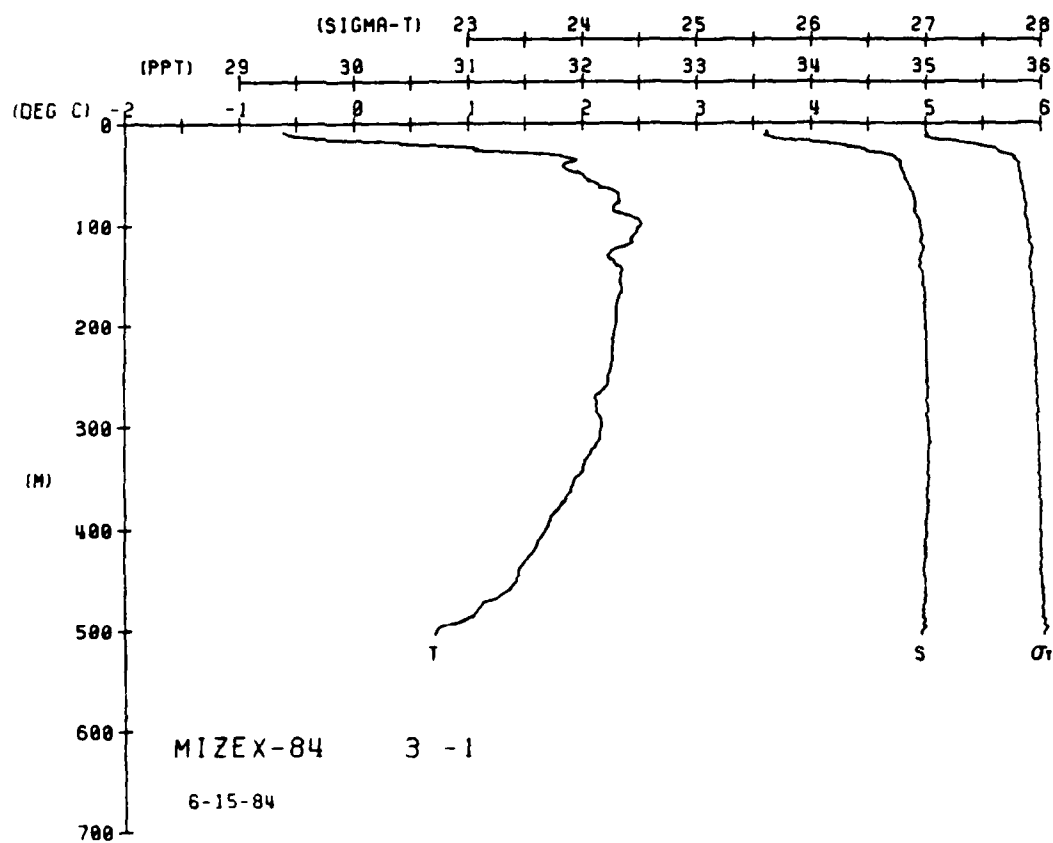
NIREX-04 STATION 1(1) CTD 12/JUN/1994 2117 GMT CODE = 1
LAT = 00.430N LNC = 5.2505E LTR = 30 LGR = 30
WIND = 0.0 BAROM = 0.0 WIND = 0.0 LGR = 30
TEMP = 0.0 SPEED = 0.0

```



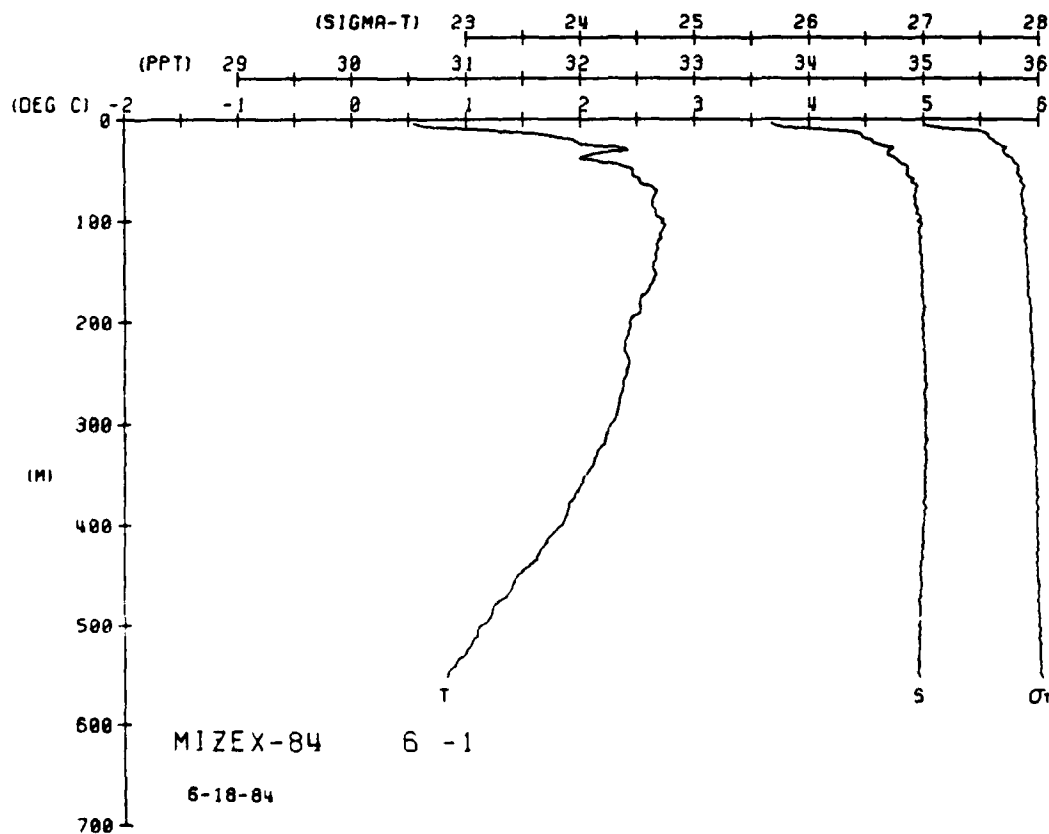
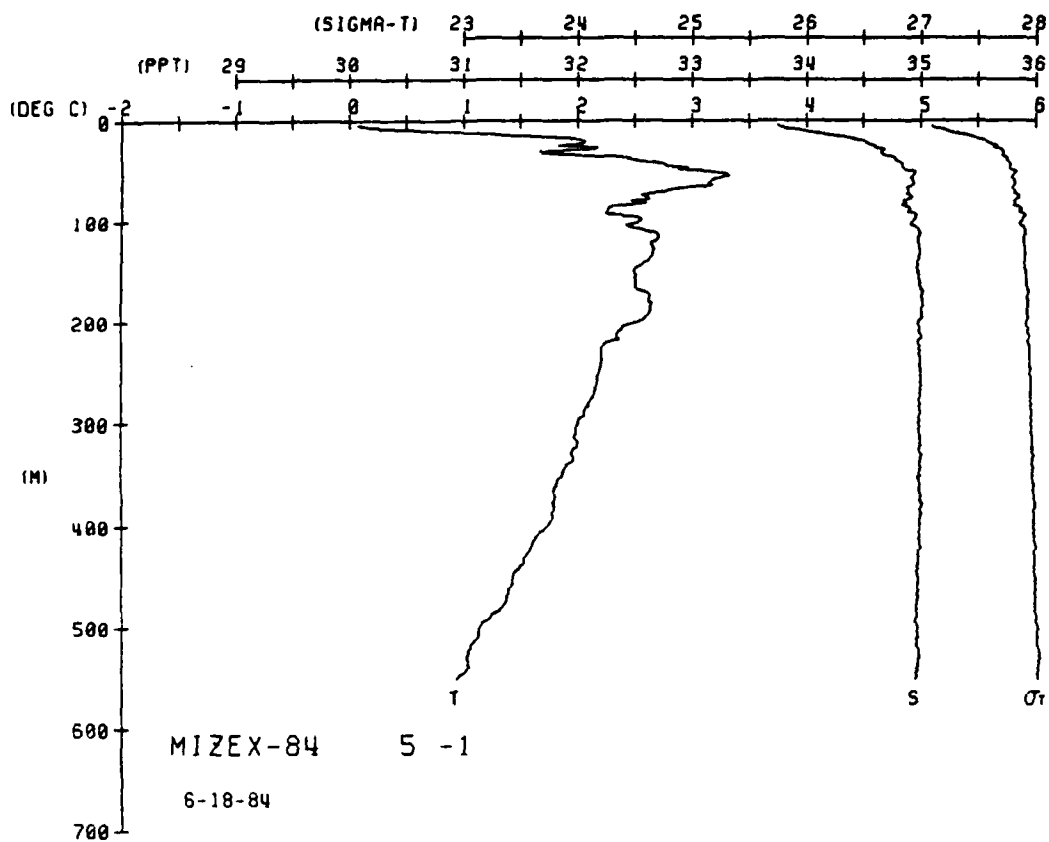
WIBEX-94 STATION 3(1) CTD 15/JUN/1984 934 GMT CODE = 1
LAT = 80.3007N LNG = 5.9763E LTER = 30: LGR = 30:
BAROM = 0.0 WIND = 0.0 SPEED = 0.0

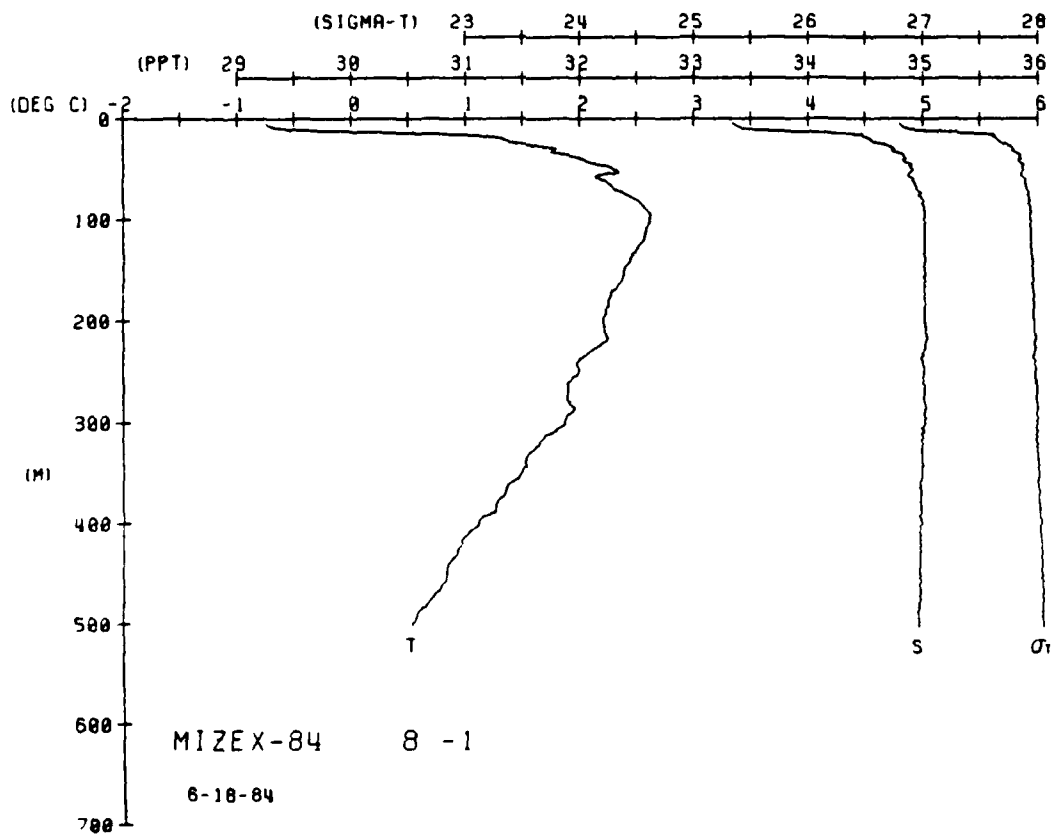
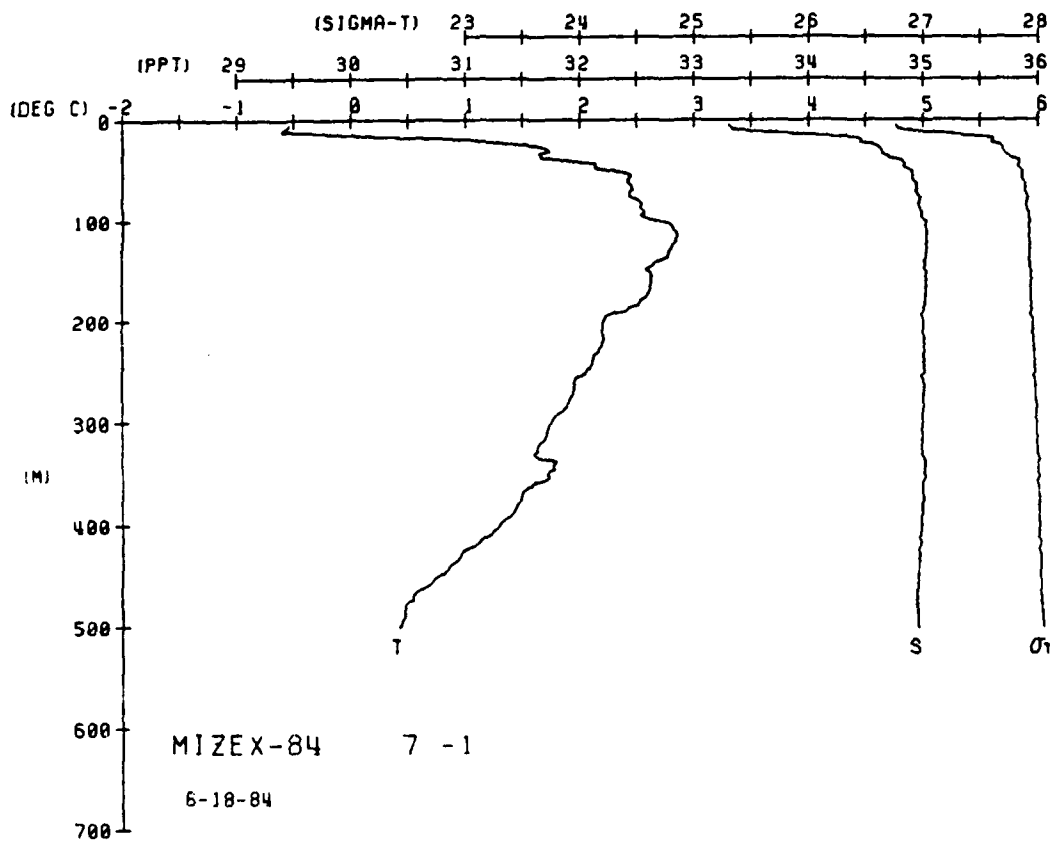
[illegible]

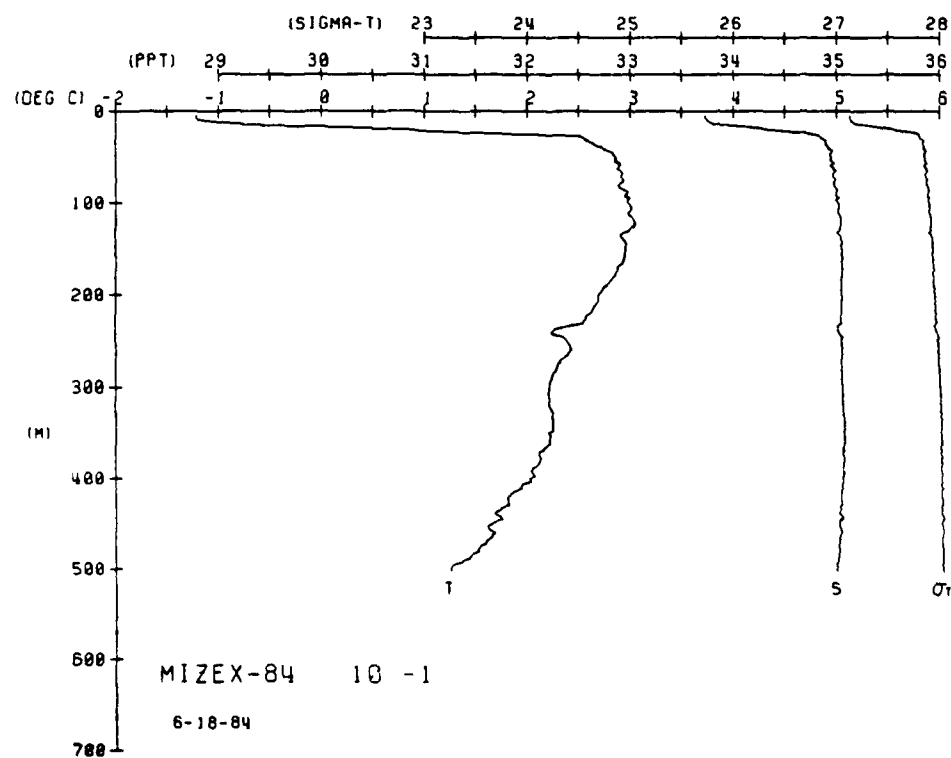
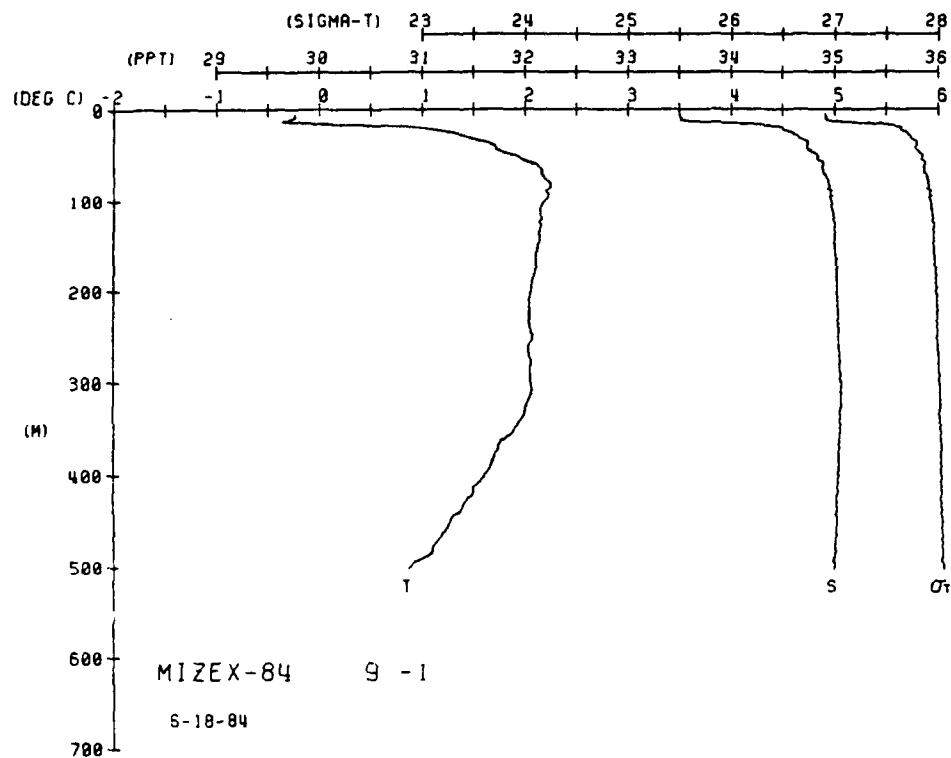


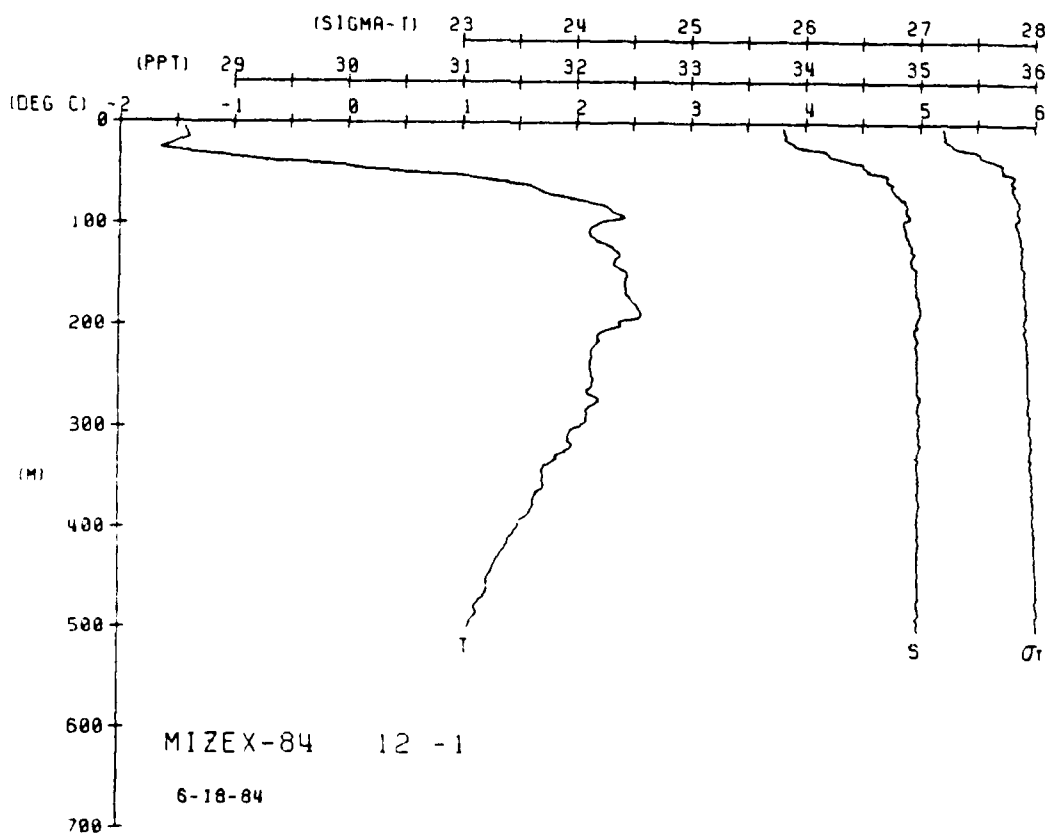
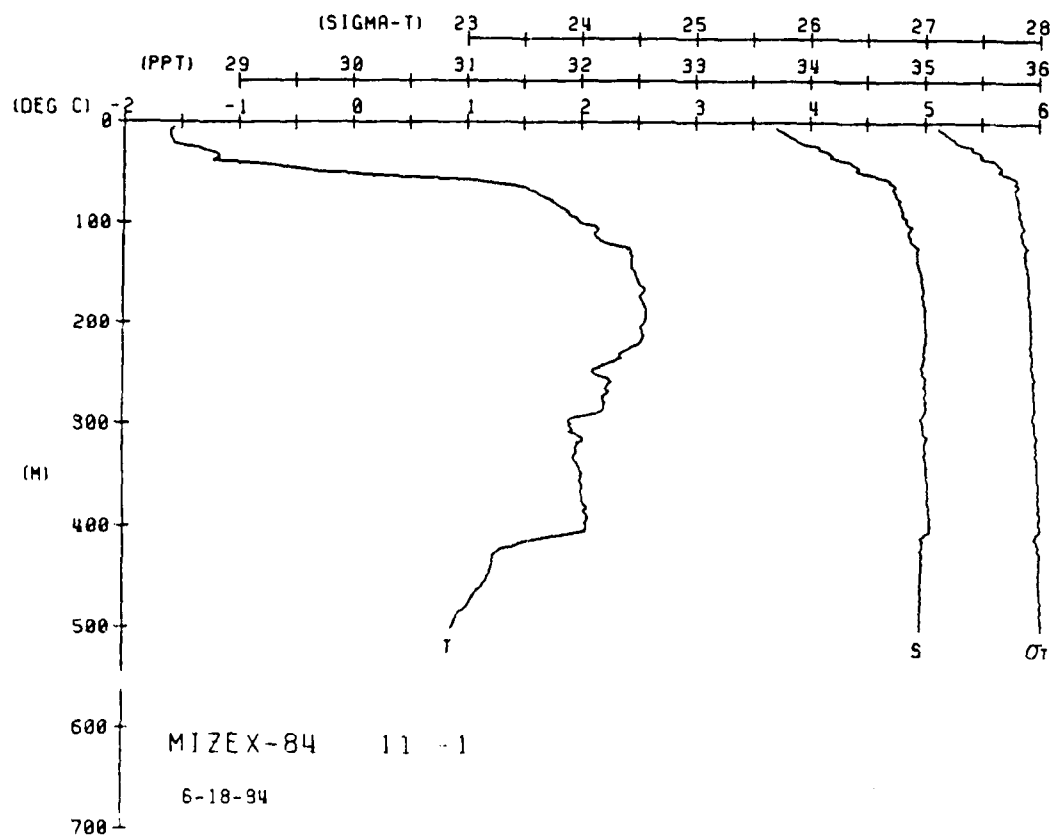
WIZEX-84 STATION 6(1) CTD 18/JUN/1988 1400 UTC 000000
LAT = 80.0267N LNG = 4.8367E LTR = 300 UGR = 300
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

[illegible][illegible]









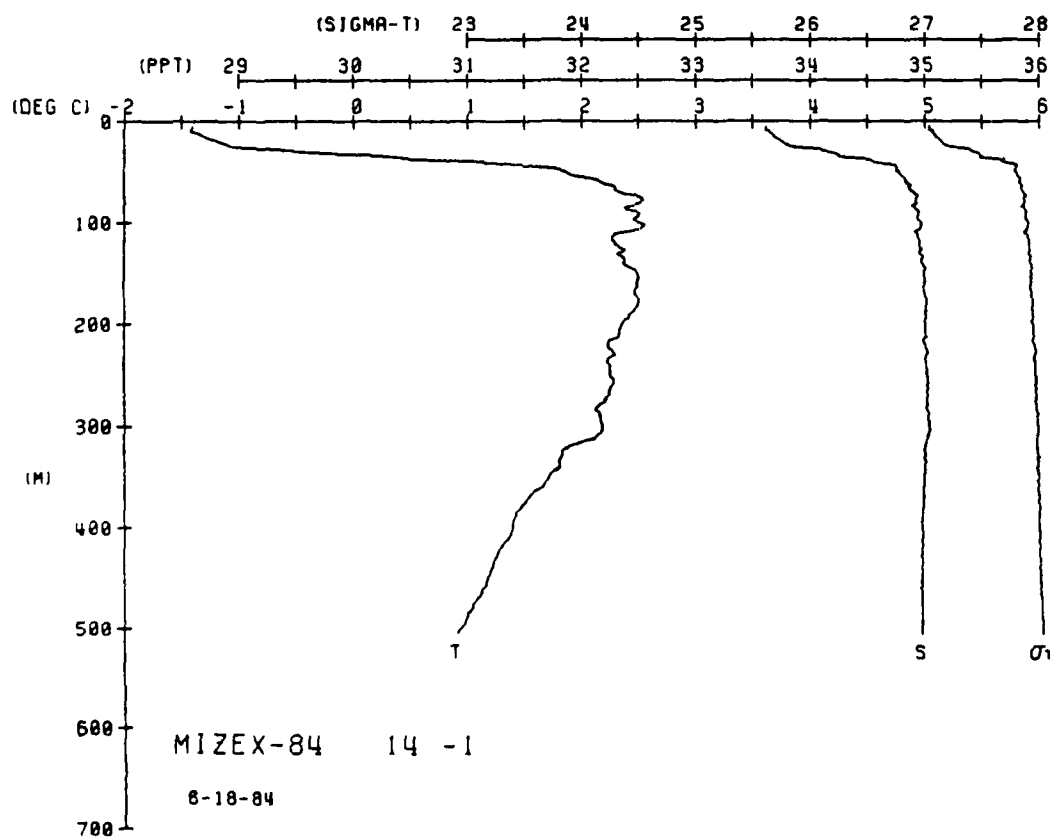
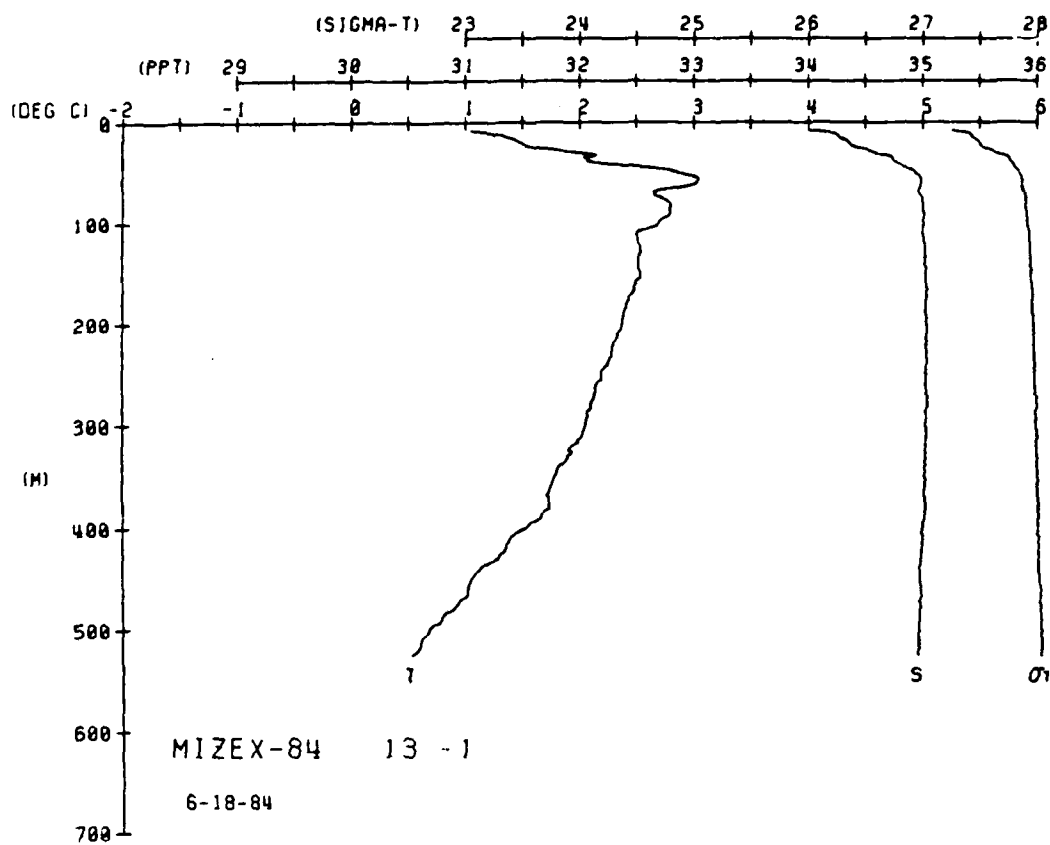
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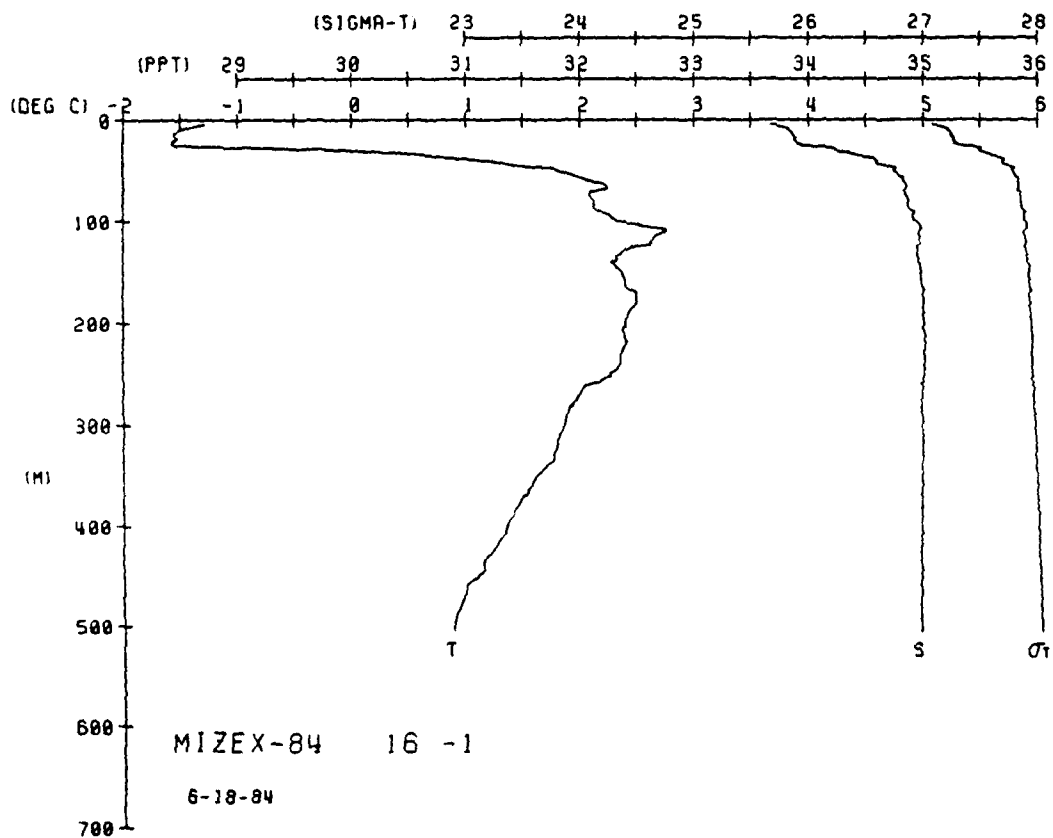
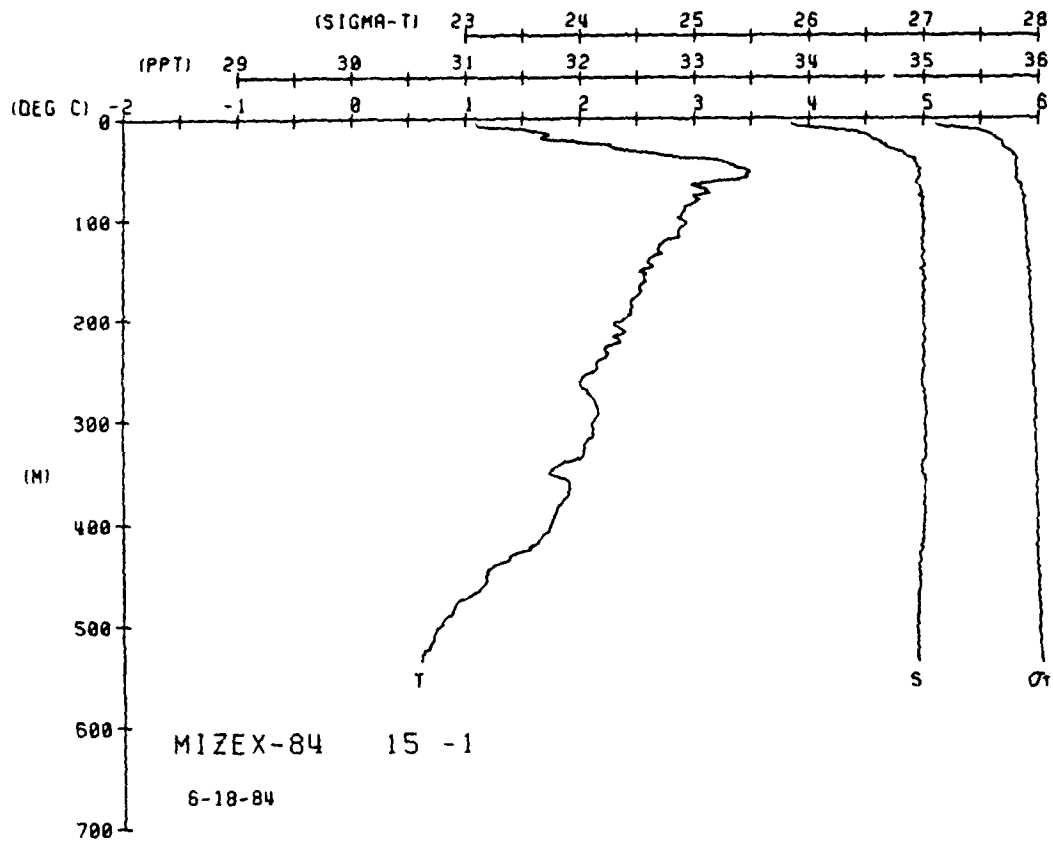
WIZEX-84 STATION 13(1) CTD 18/JUN/1984 1955 GMT CODE = 1
LAT = 80.113N LNG = 4.1517E LTER = 300. LGER = 300.
AIP TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

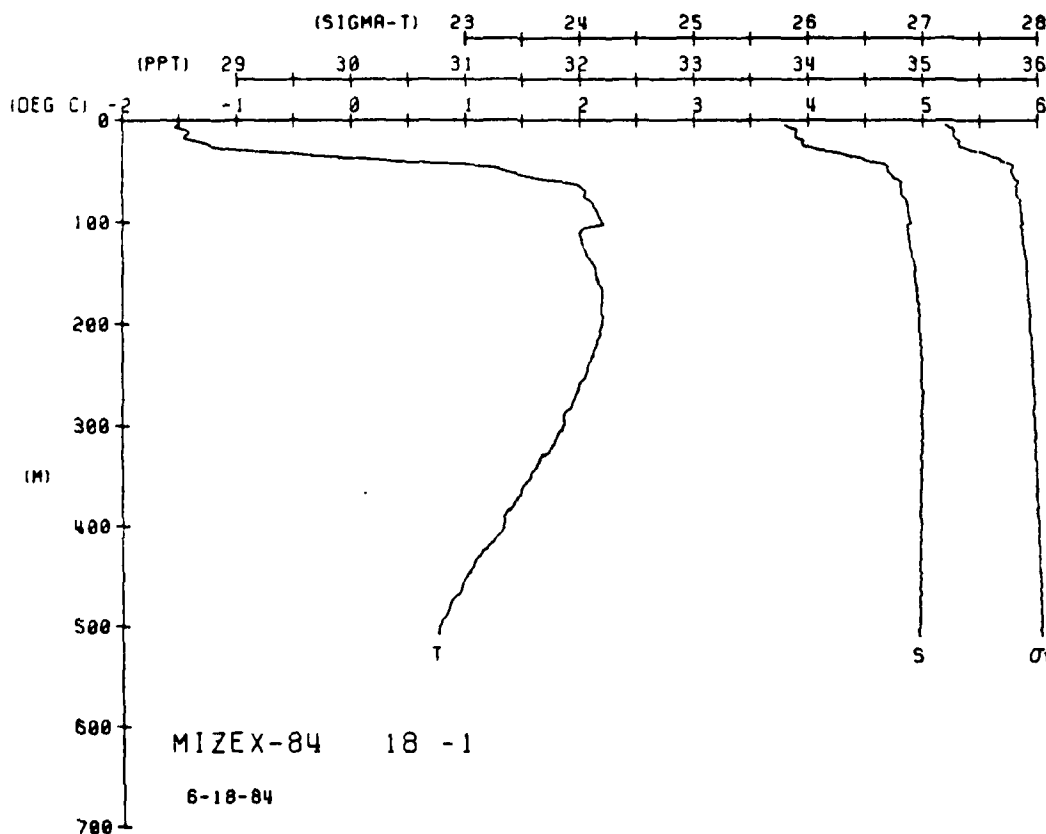
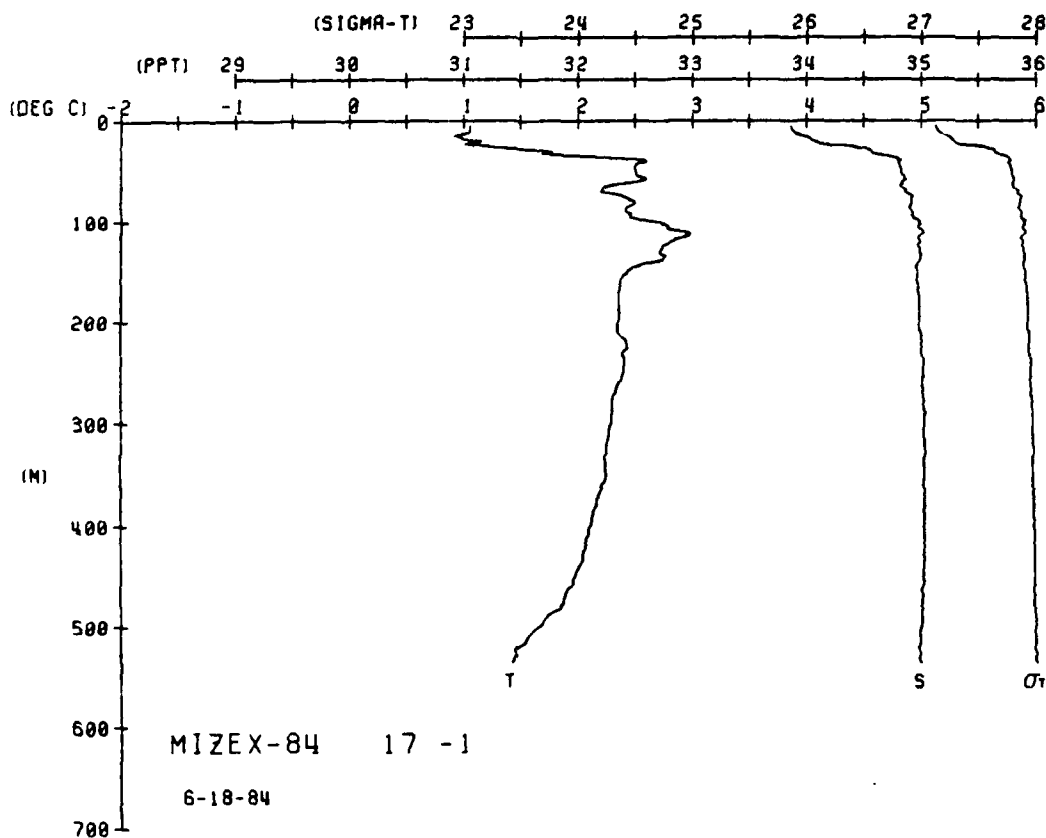
```

DEPTH	TEMP	PTEMP	SALIN	SIG T	SPVOL	DYNHT	SOUND
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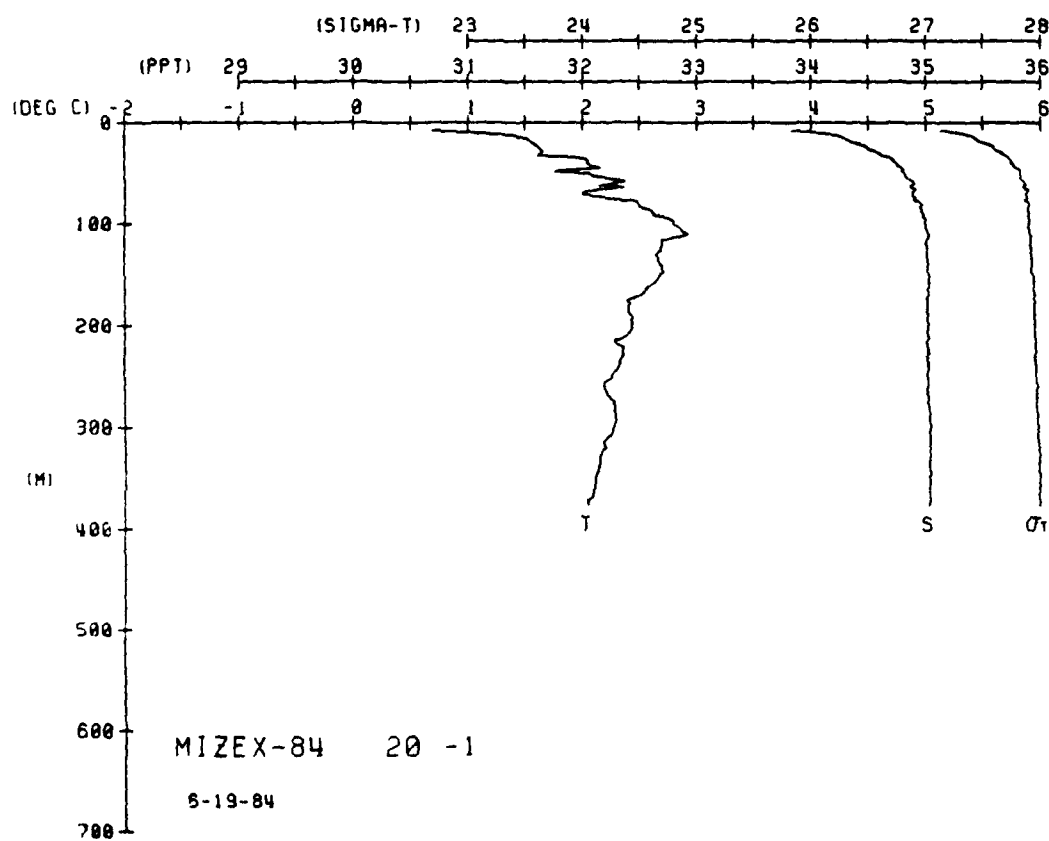
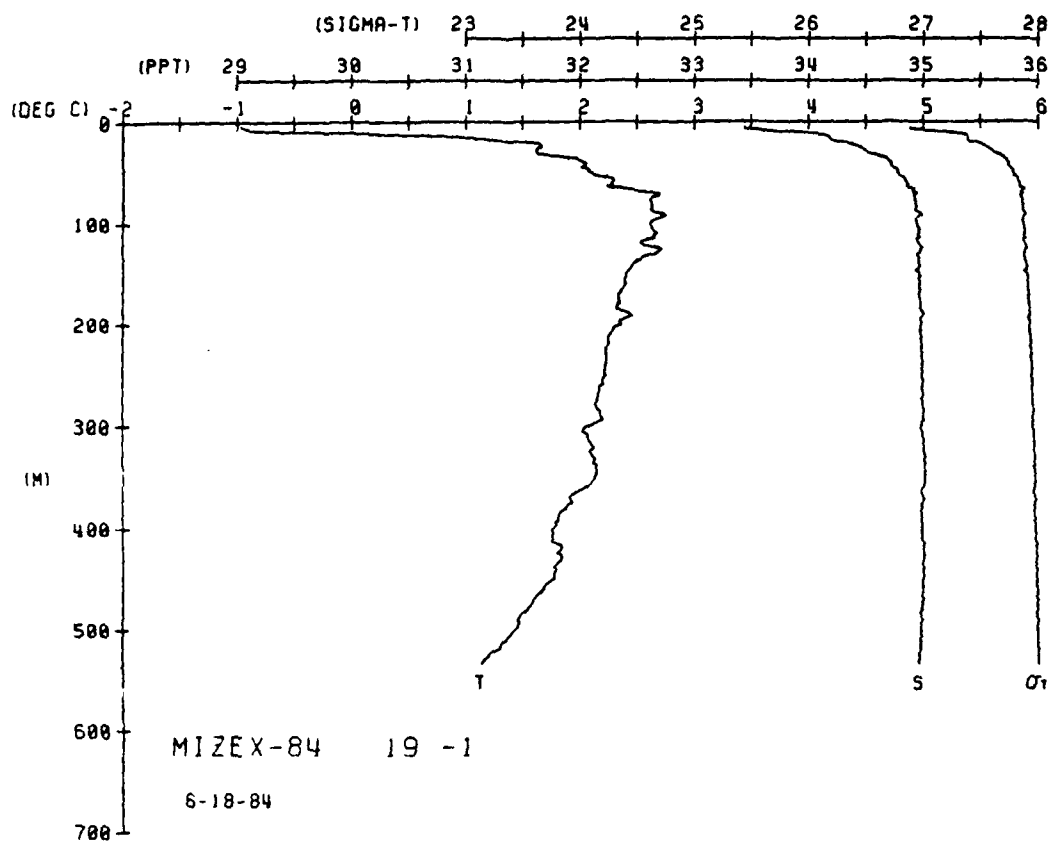
[illegible]

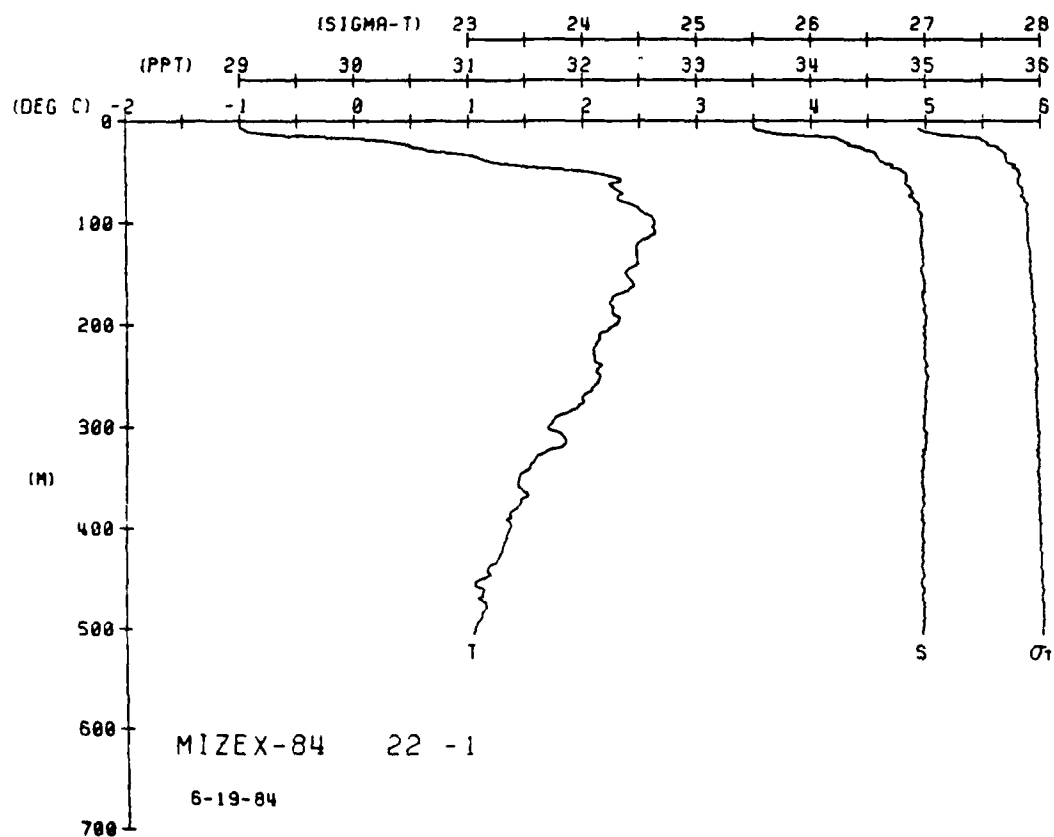
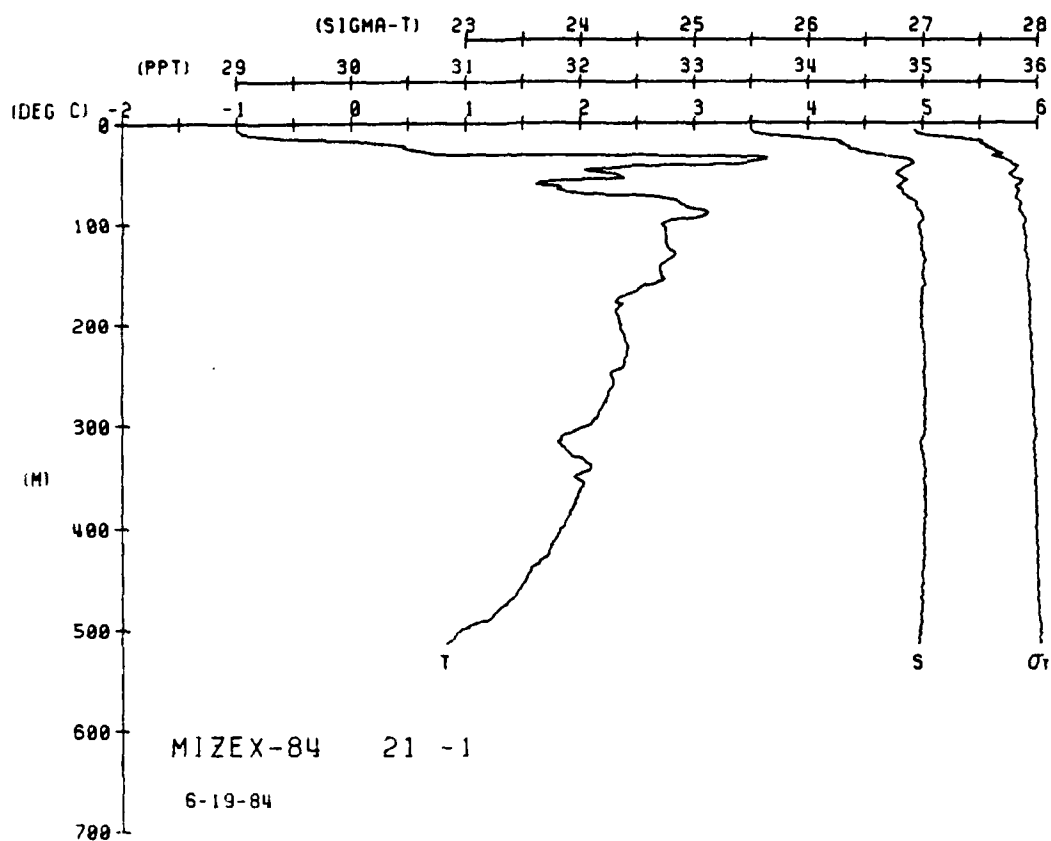


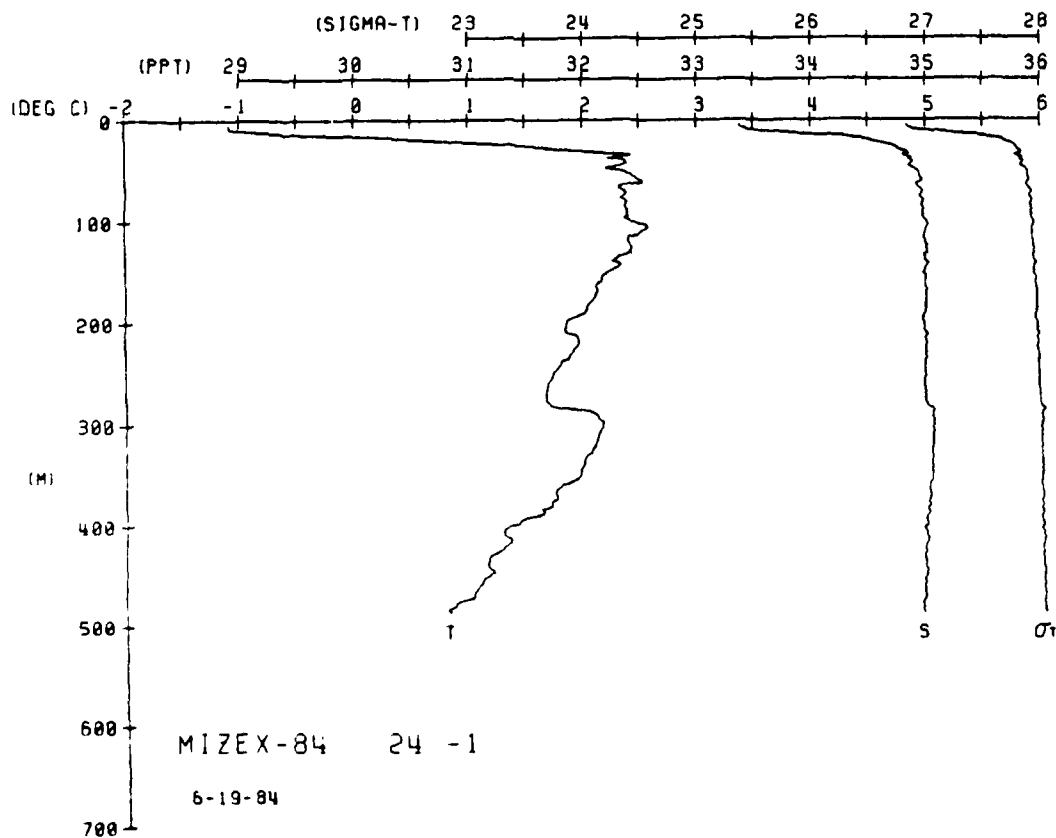
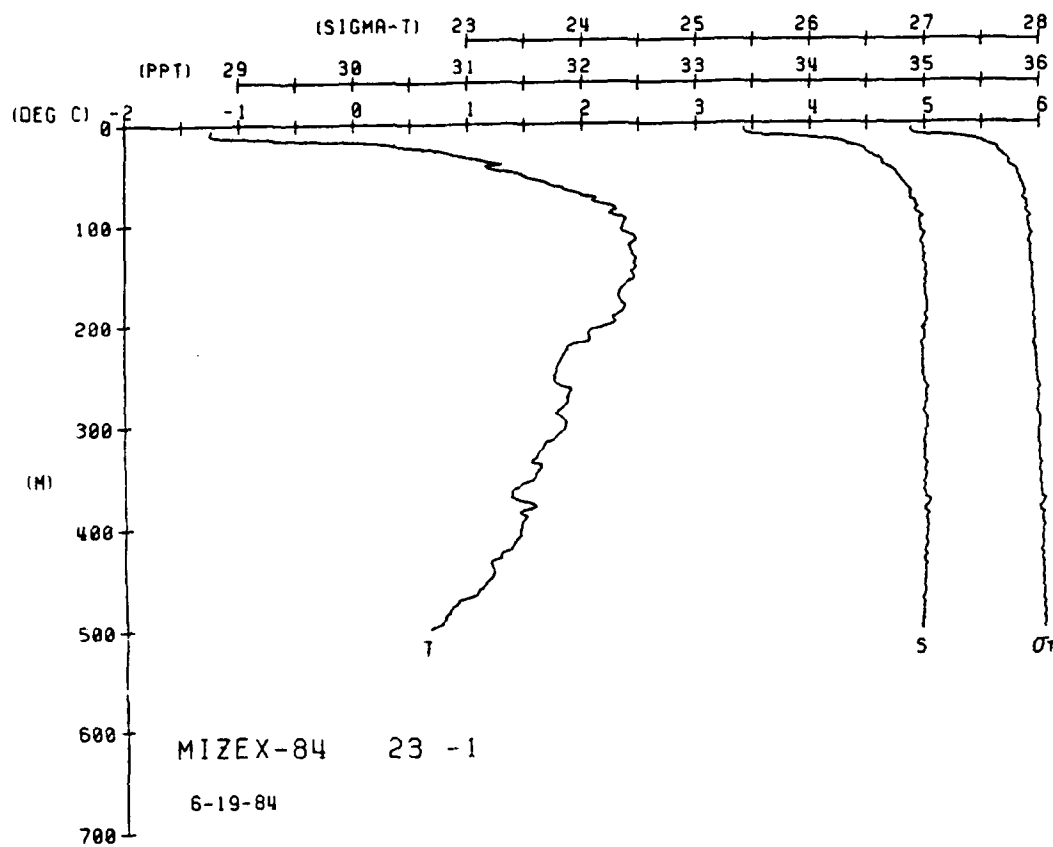


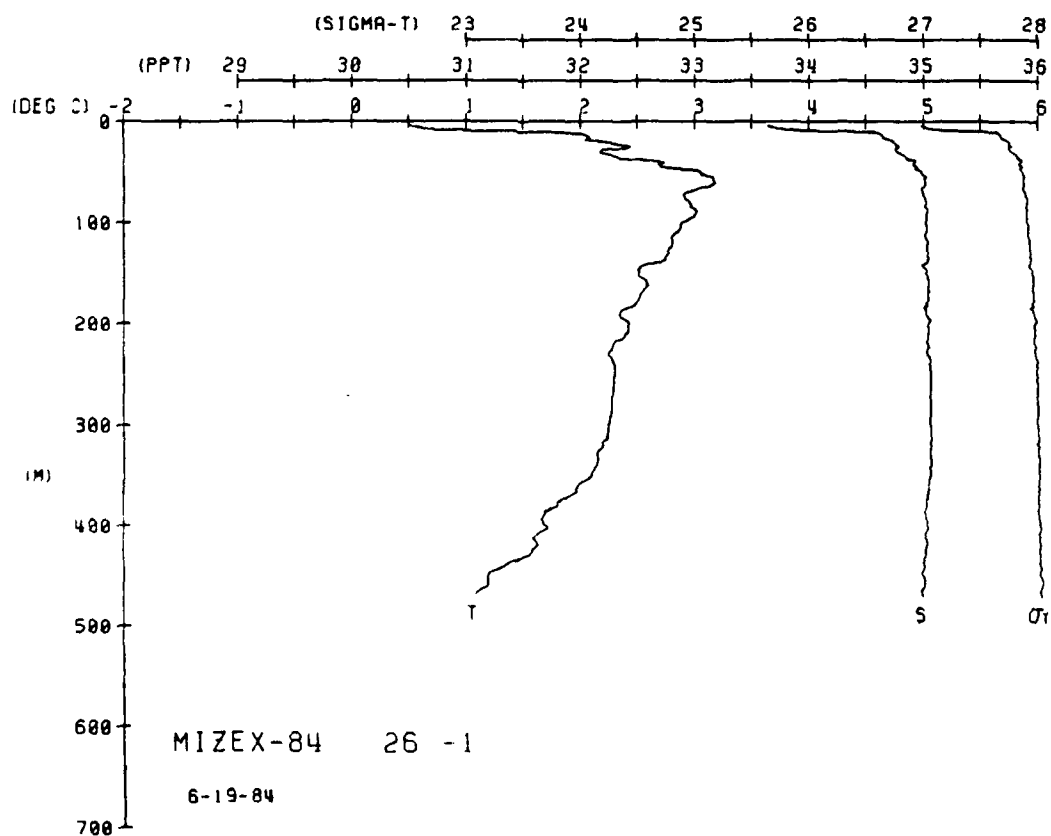
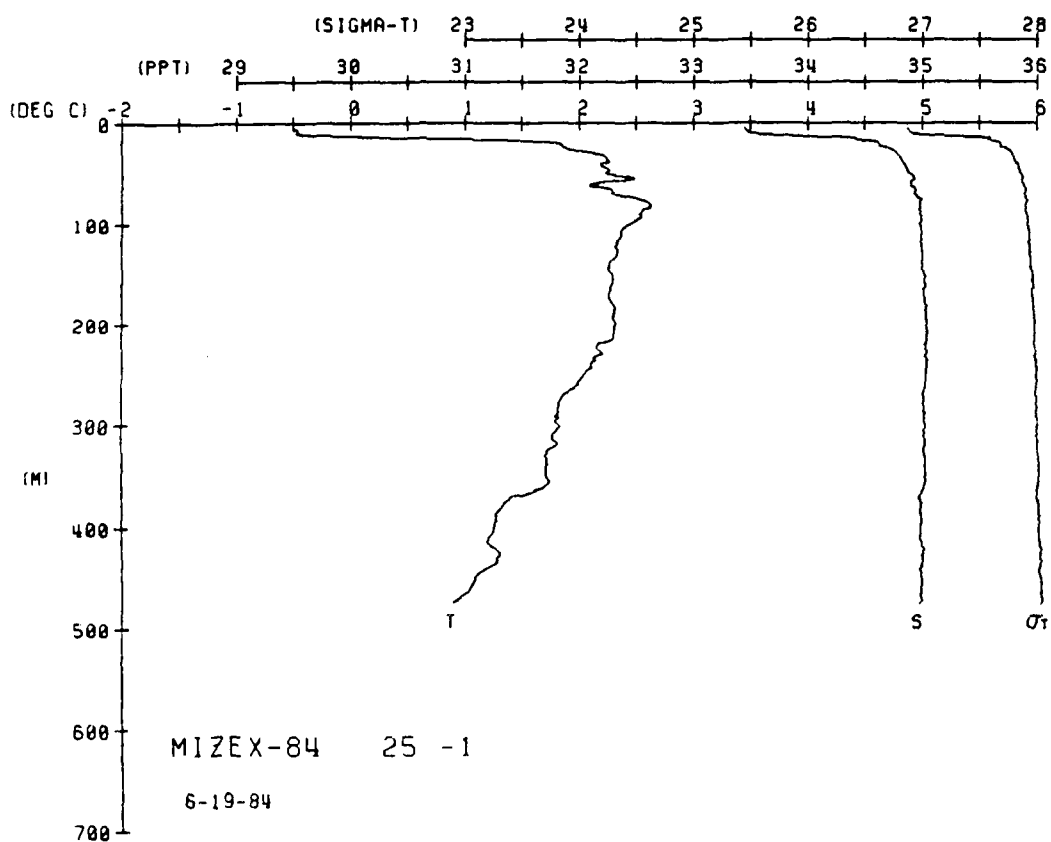


[illegible][illegible]









WIZEX-84 STATION 28(1) CTU 20/JUN/1984 YUJ GMI LUDE - A
LAT = 80.2317N LNC = 6.1650E LTR = 300. LGER = 300.
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041

SOUND

DINHI

SPVOL

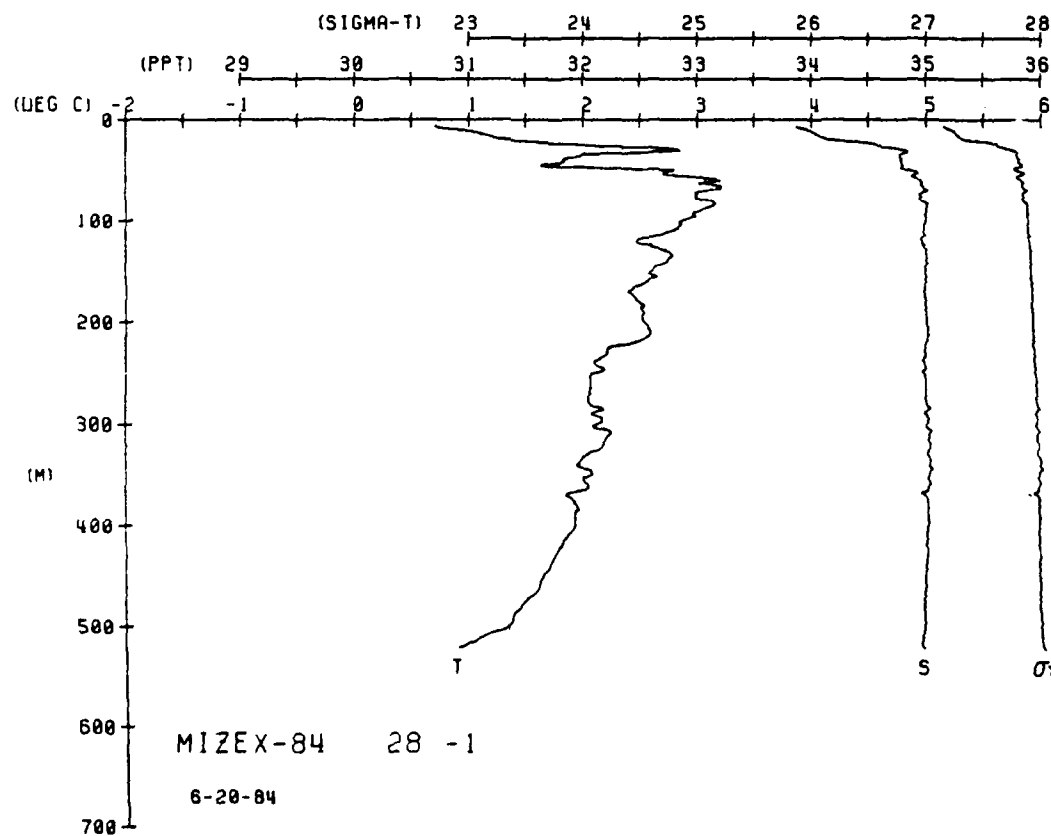
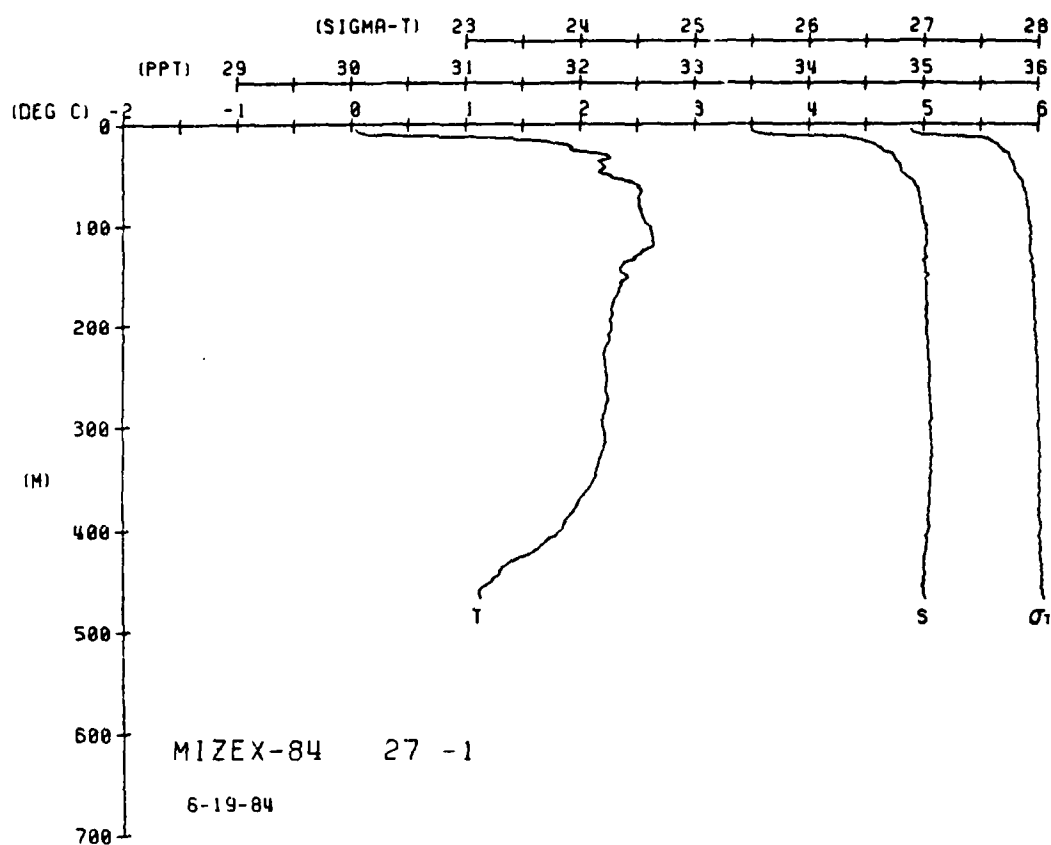
SIG T

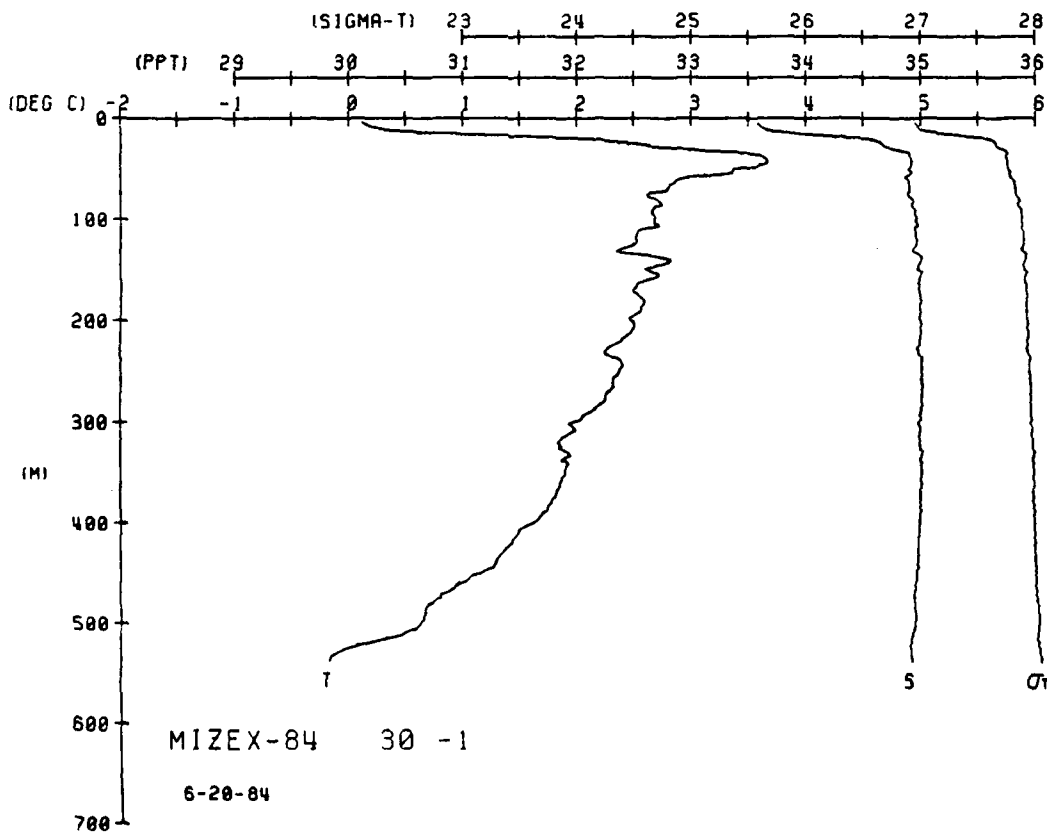
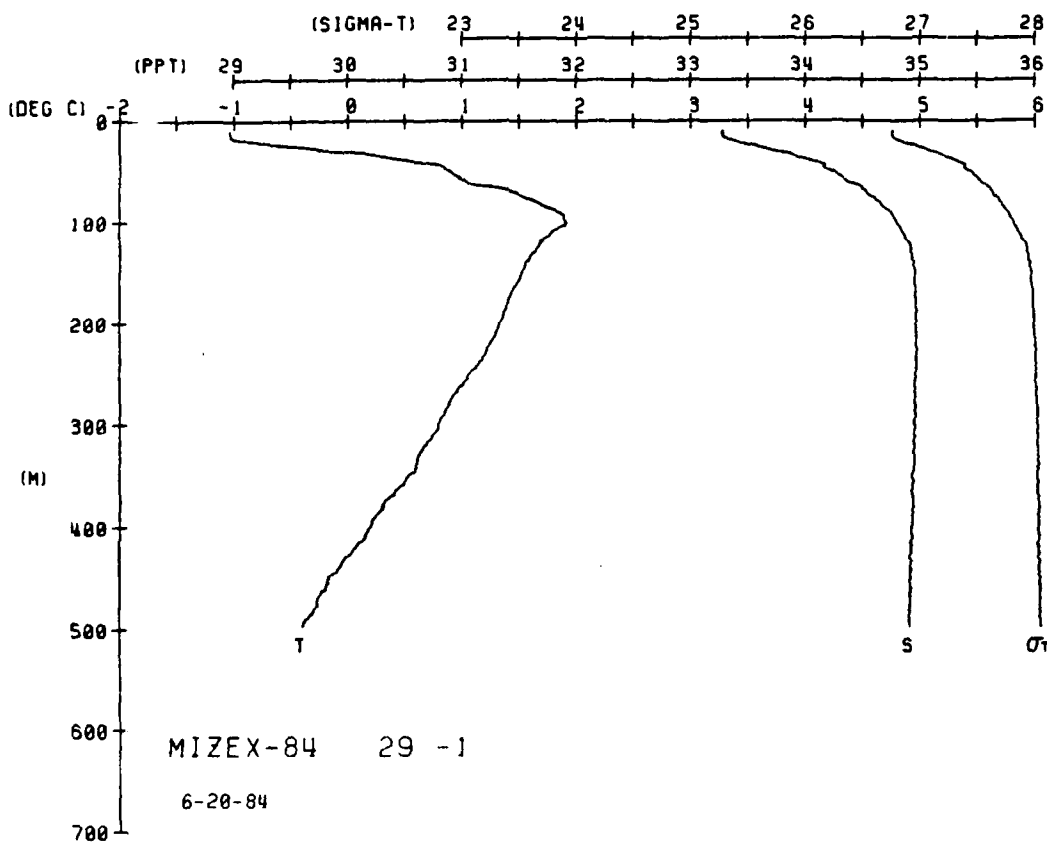
SALIN

PTMP

TEMP

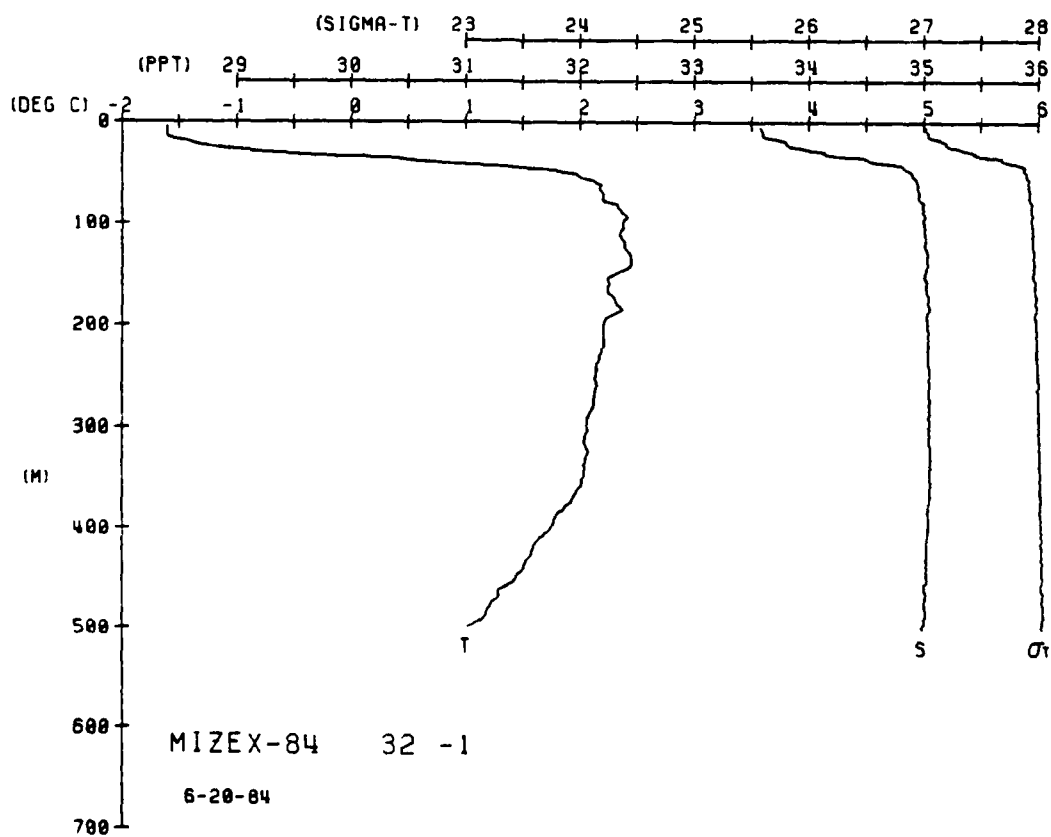
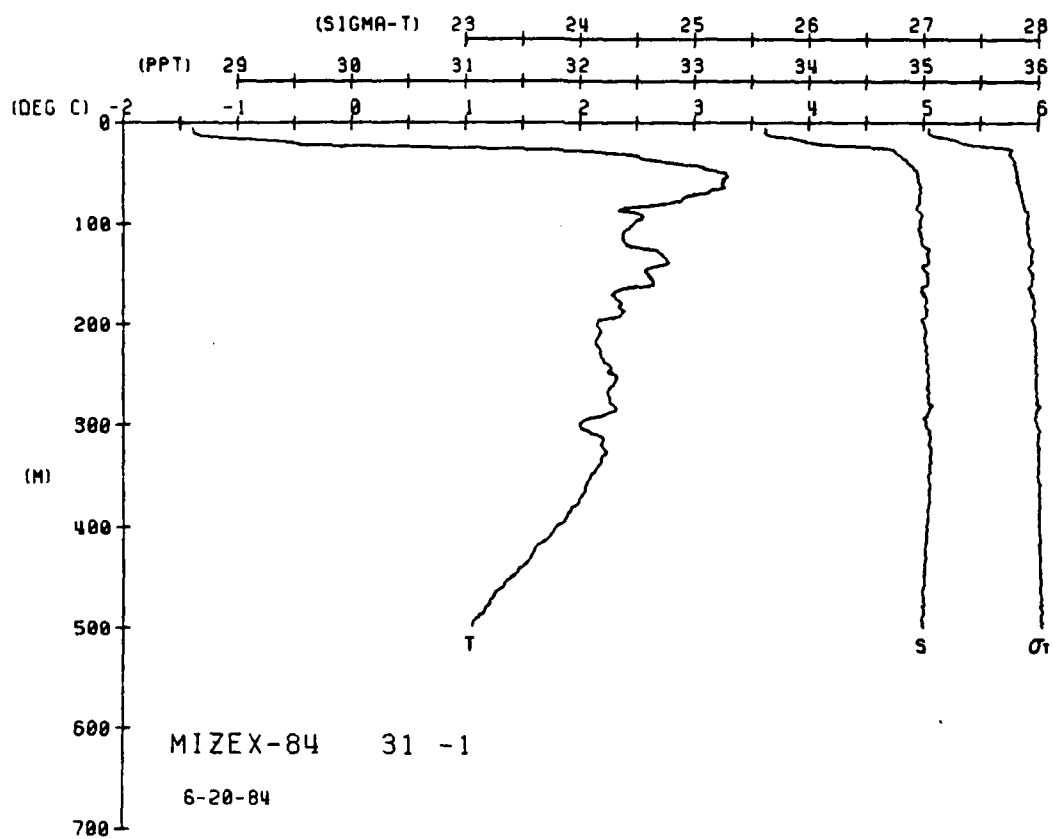
DEPTH





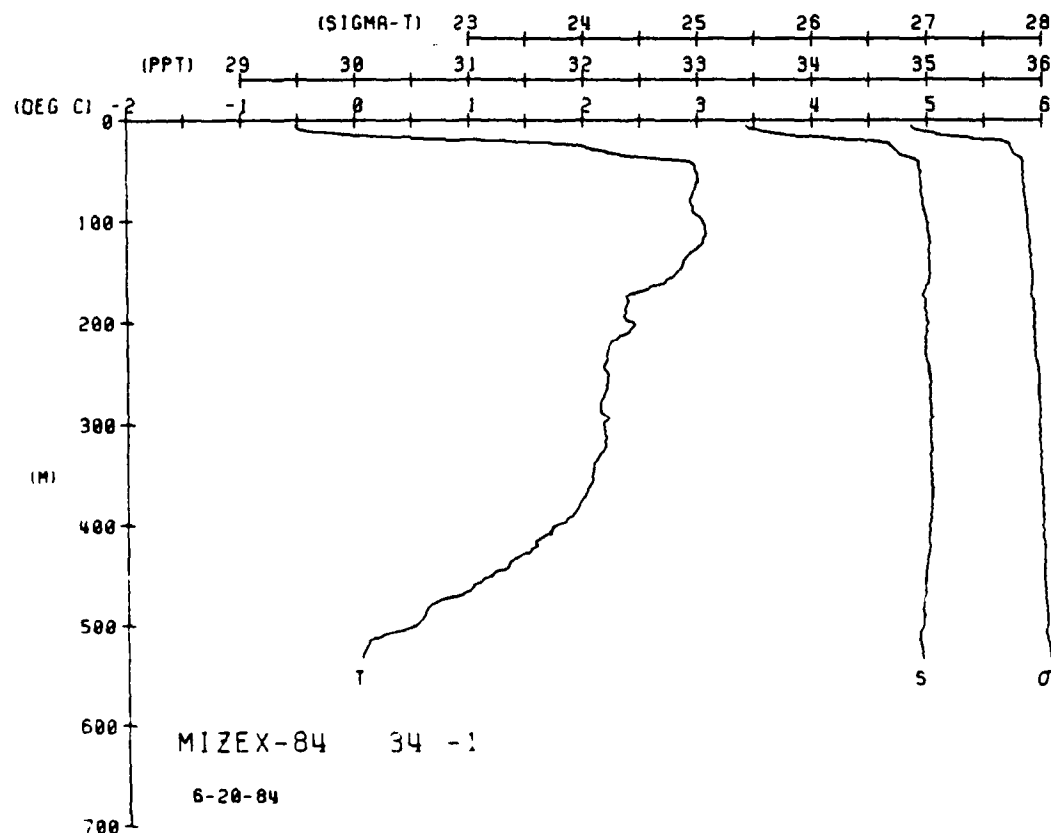
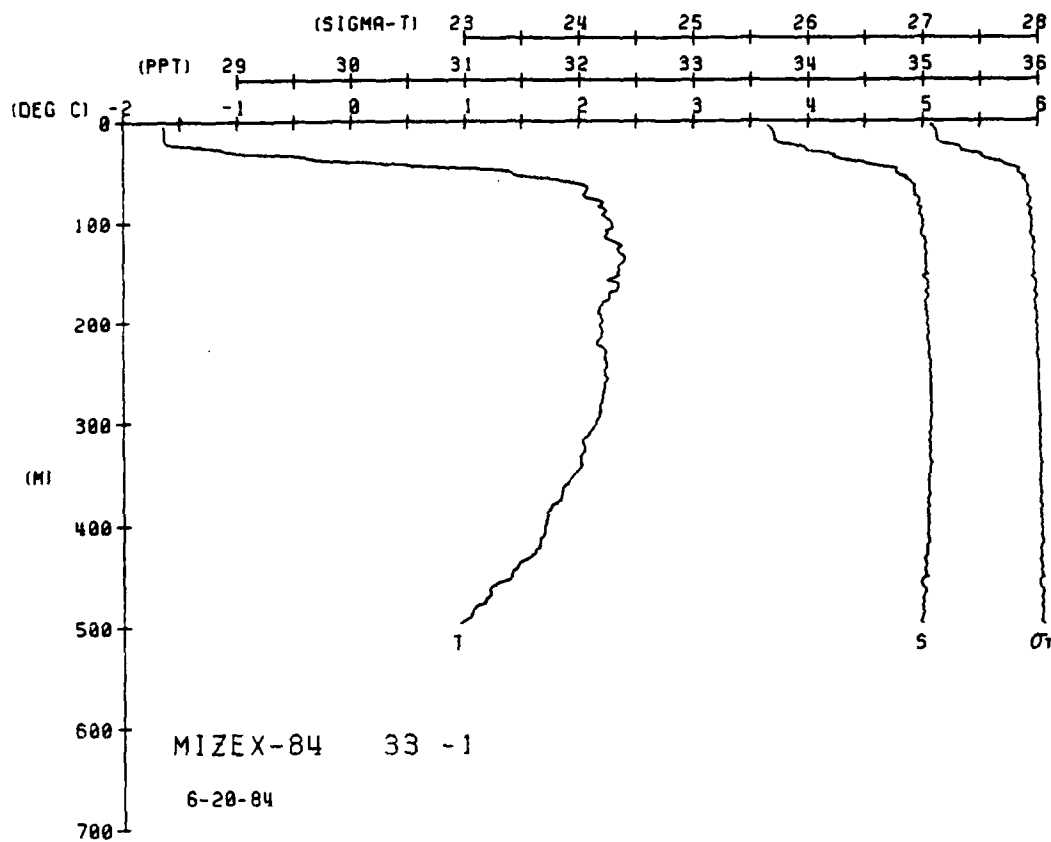
[illegible]

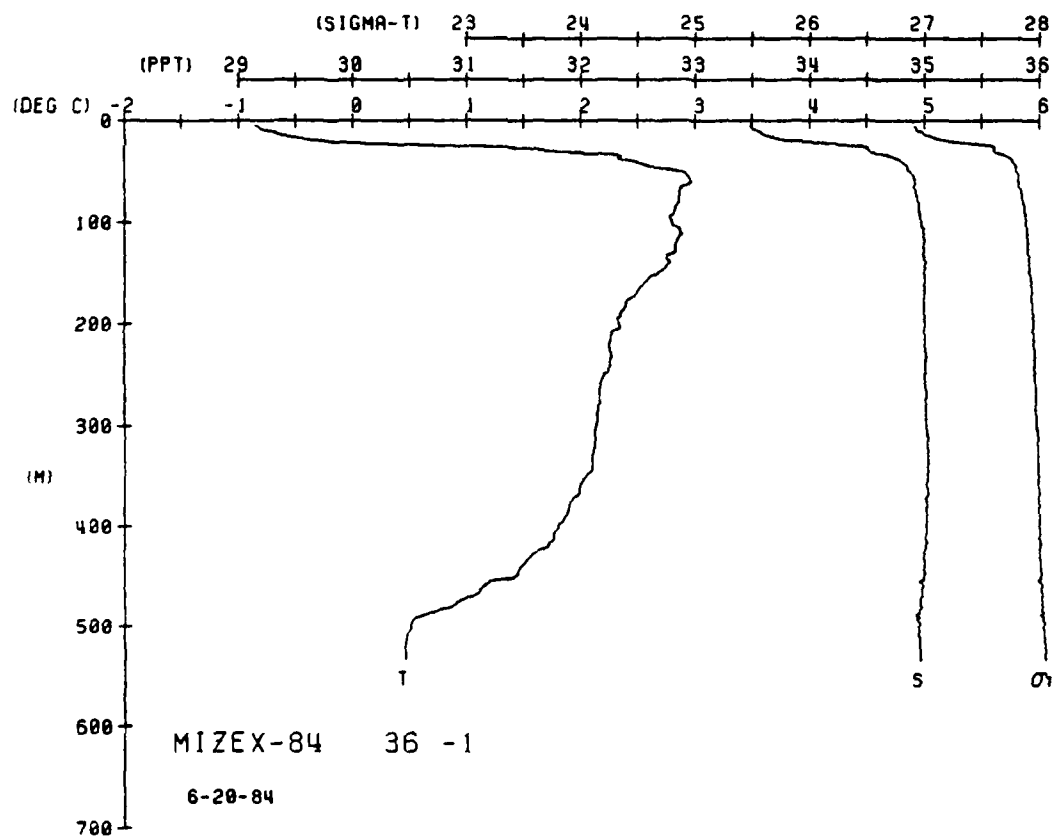
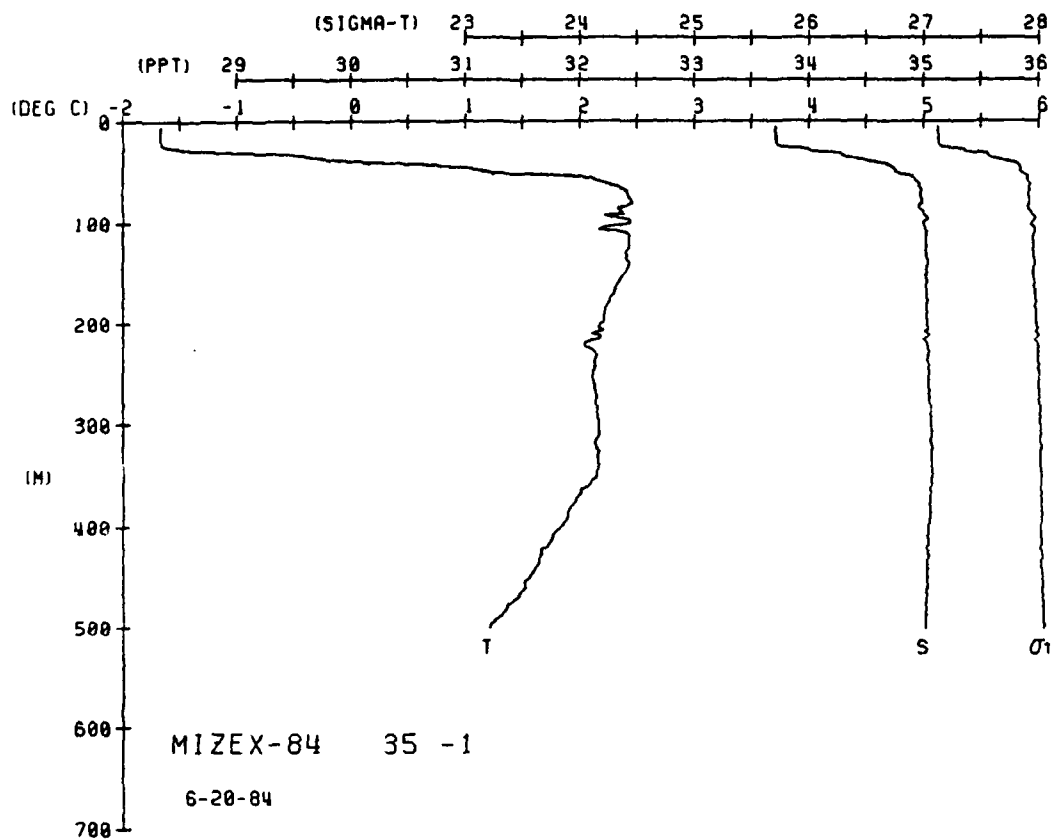
The image shows a vintage computer terminal screen displaying a data dump. On the left side, there are vertical labels for different data channels: SOUND, DIMMI, SPVOL, SIG I, SALIN, TMP, TEMP, and DEPTH. Each label corresponds to a column of data on the screen. The data appears to be a series of measurements or sensor readings over time, with some values being numerical and others appearing as symbols or codes. The screen has a dark background with light-colored text.



WIZEX-84 STATION 34(1) CTD 20/JUN/1984 1410 GMT
LAYER = 80.3783N LNG = 5.6667E LTR = 300.0 LGEN = 300.0
AIR TEMP = 0.0 BARUM = 0.0 WIND = 0.0 SPEED = 0.0

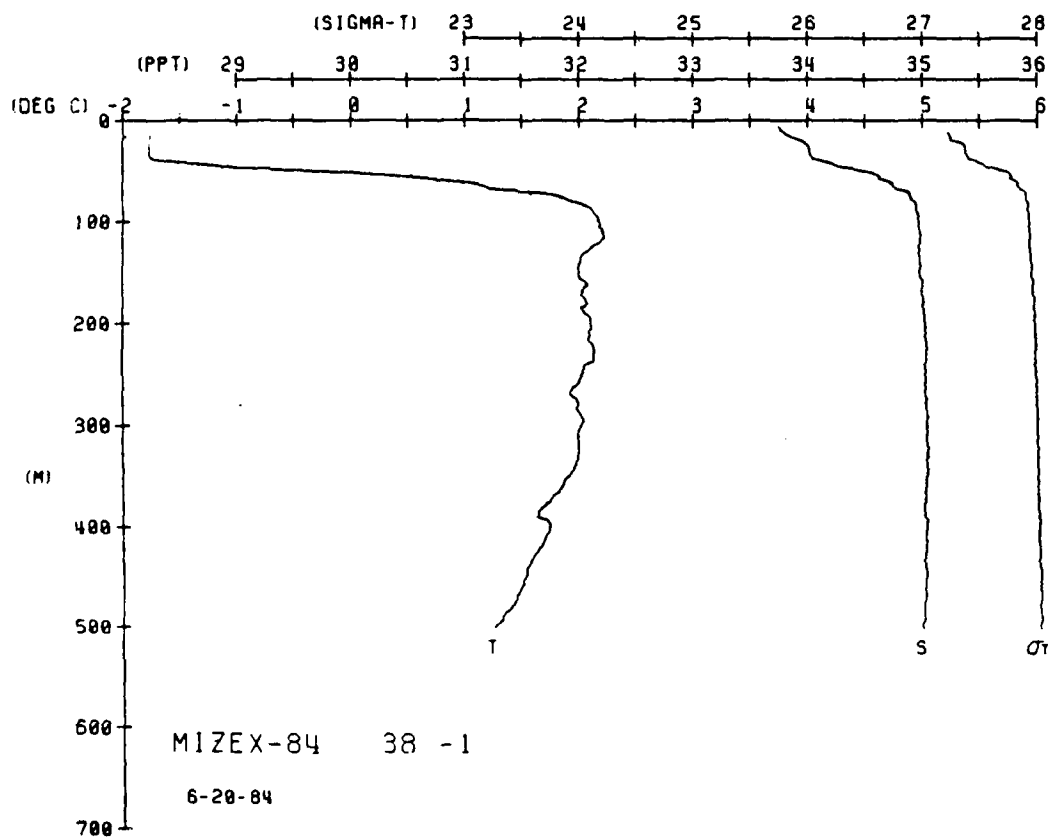
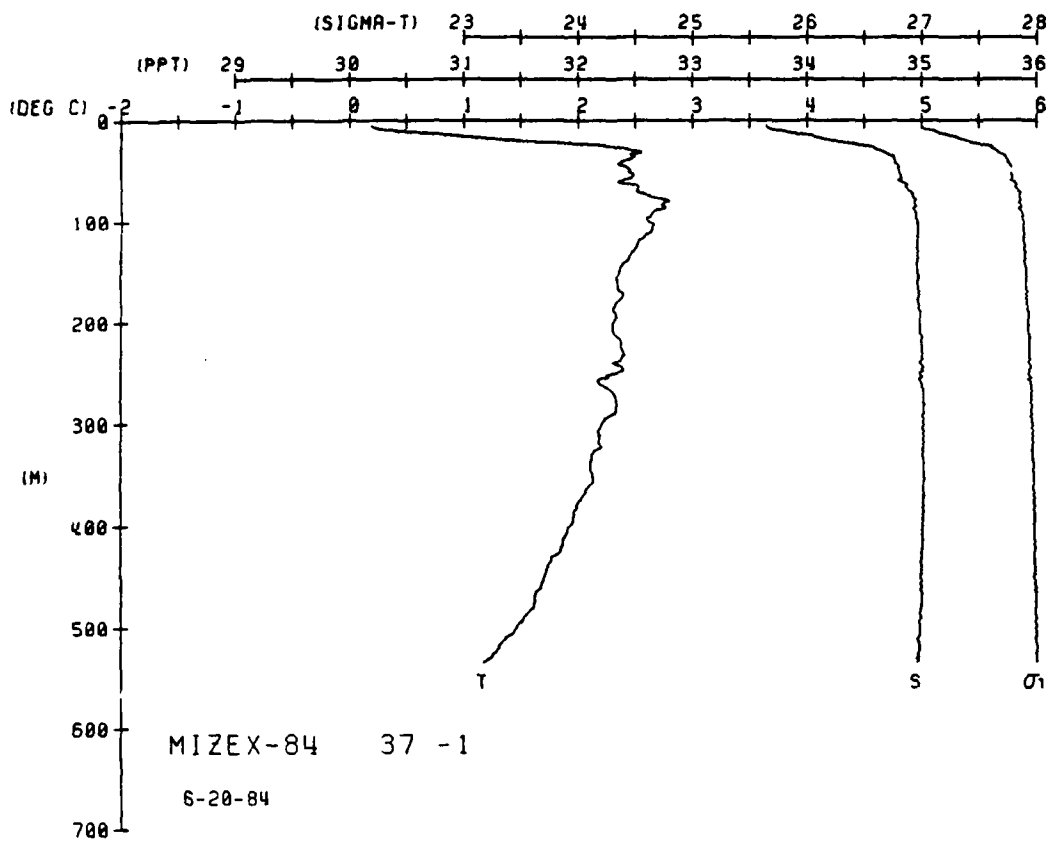
[illegible][illegible]

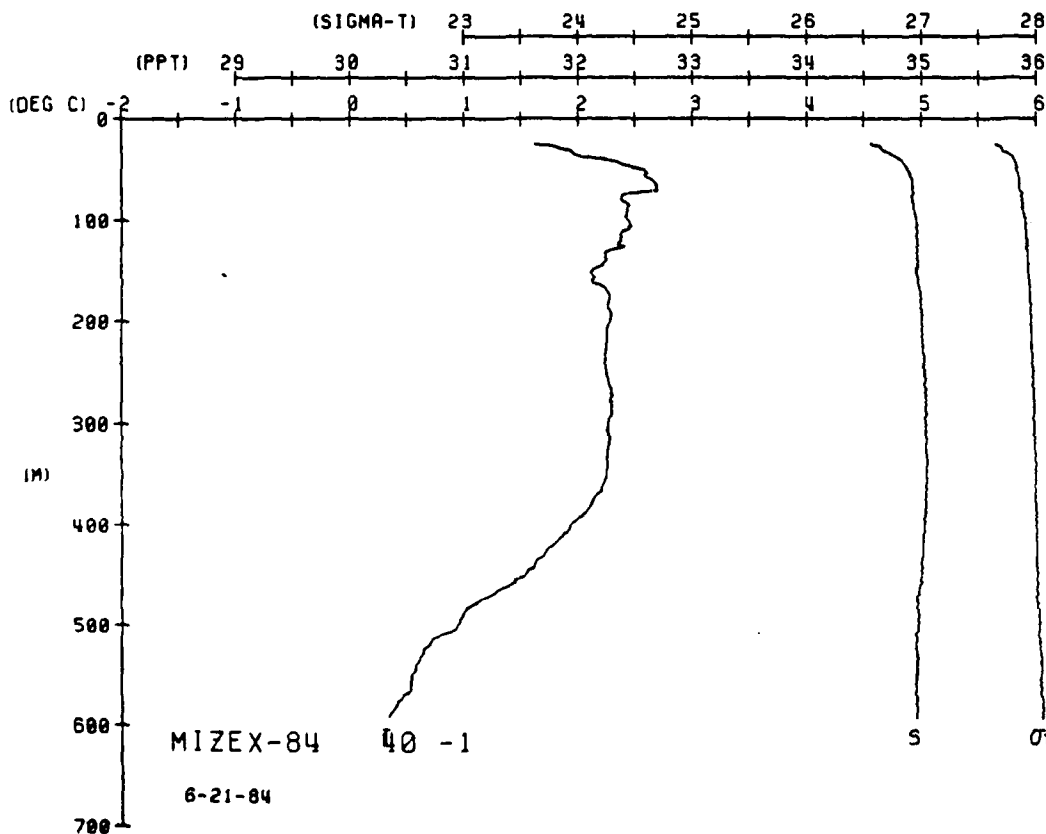
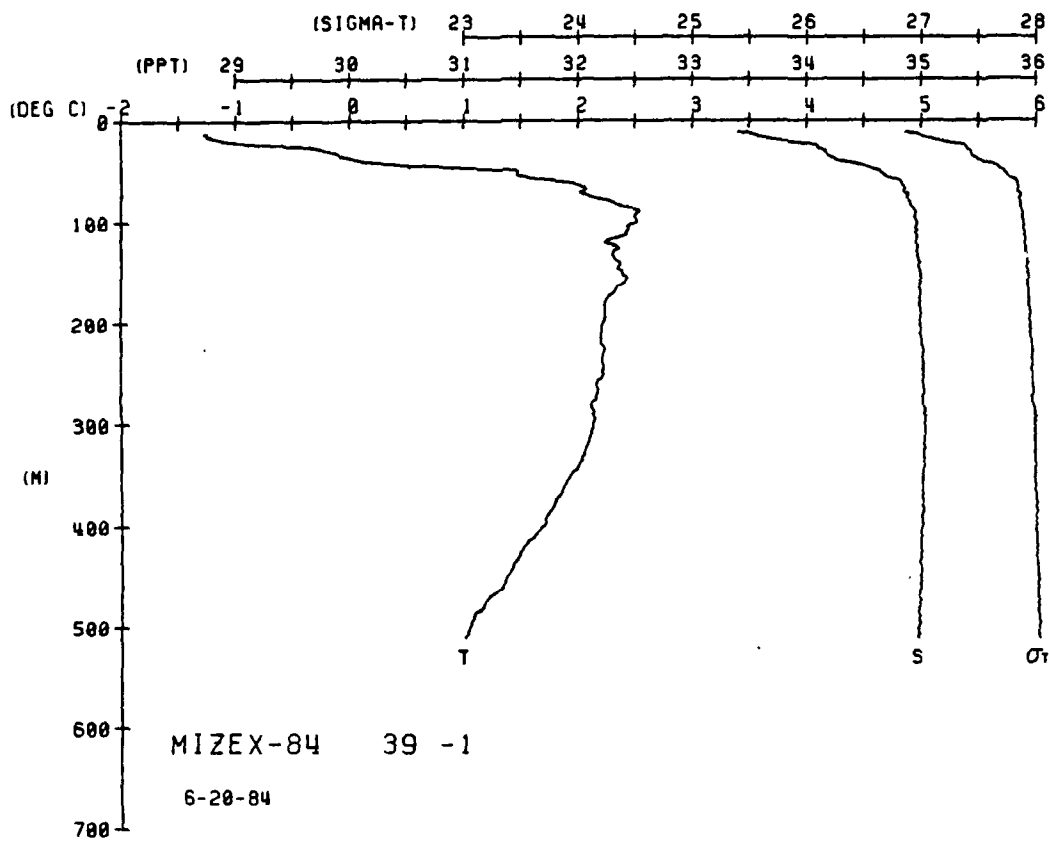


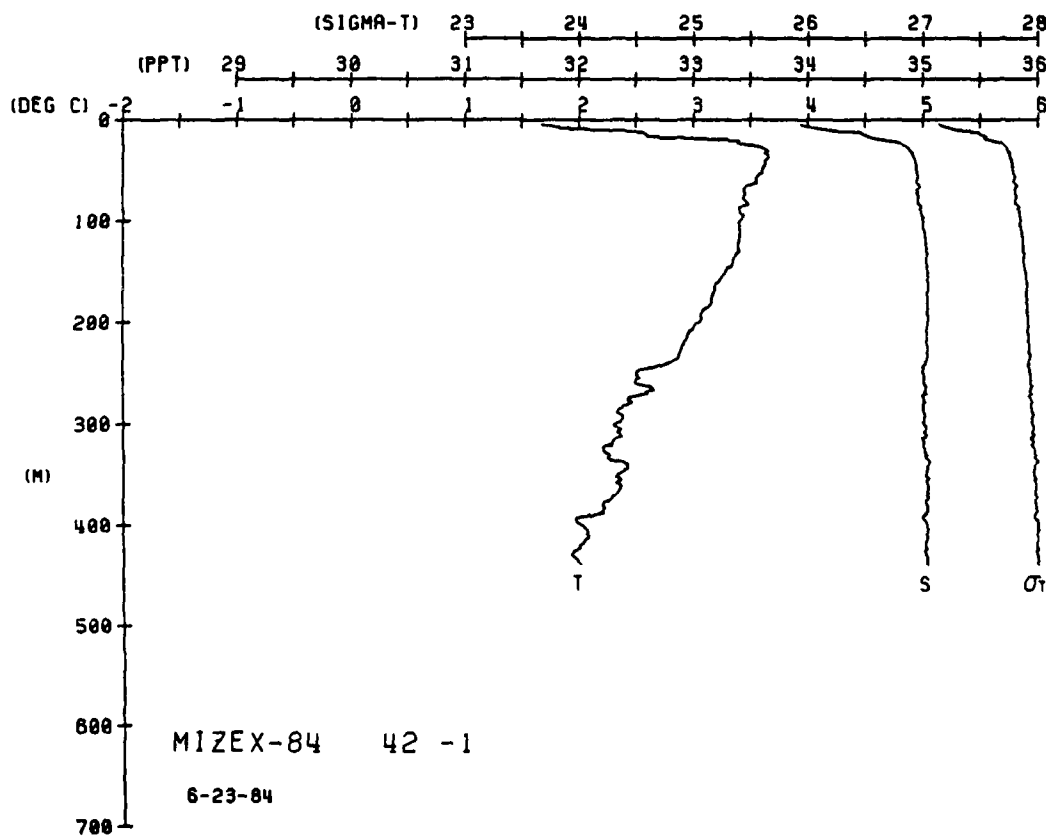
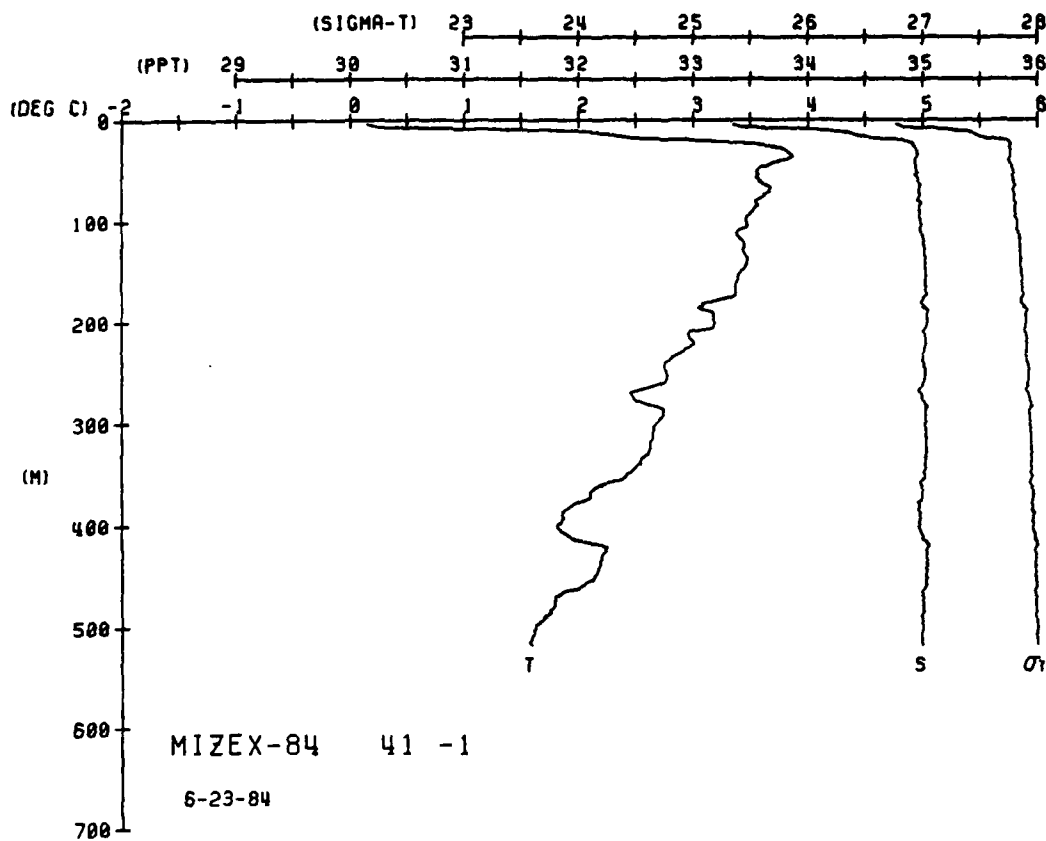


RITEK-94 STATION 37(1) CTU 20/JUN/1984 1341 GMT CODE = 1
 LAT = 00.5200N LNC = 5.1617E LTER = 300.0 LGR = 300.
 AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

[illegible]



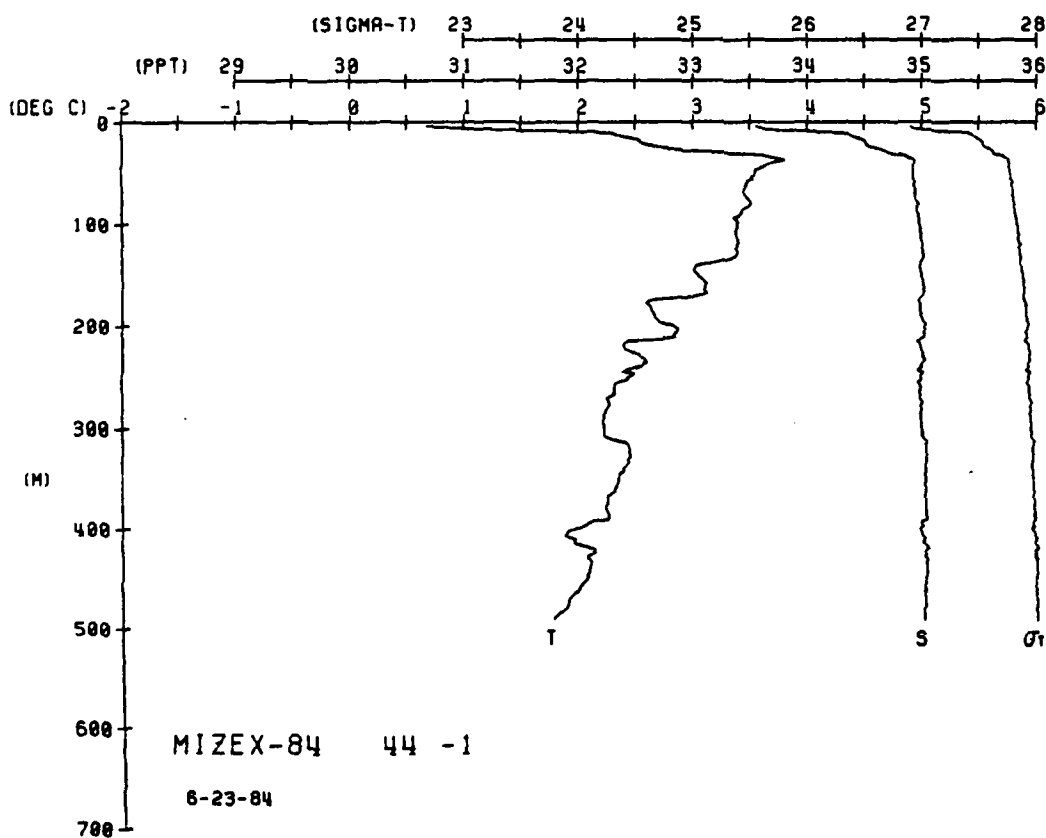
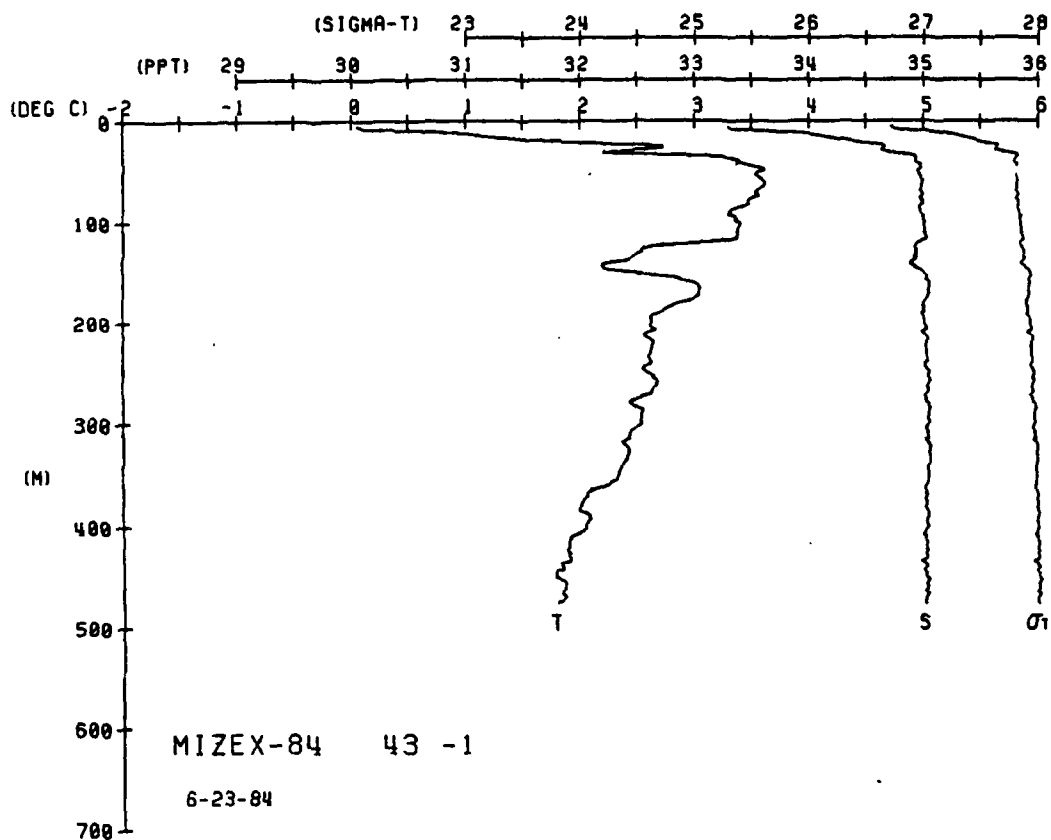


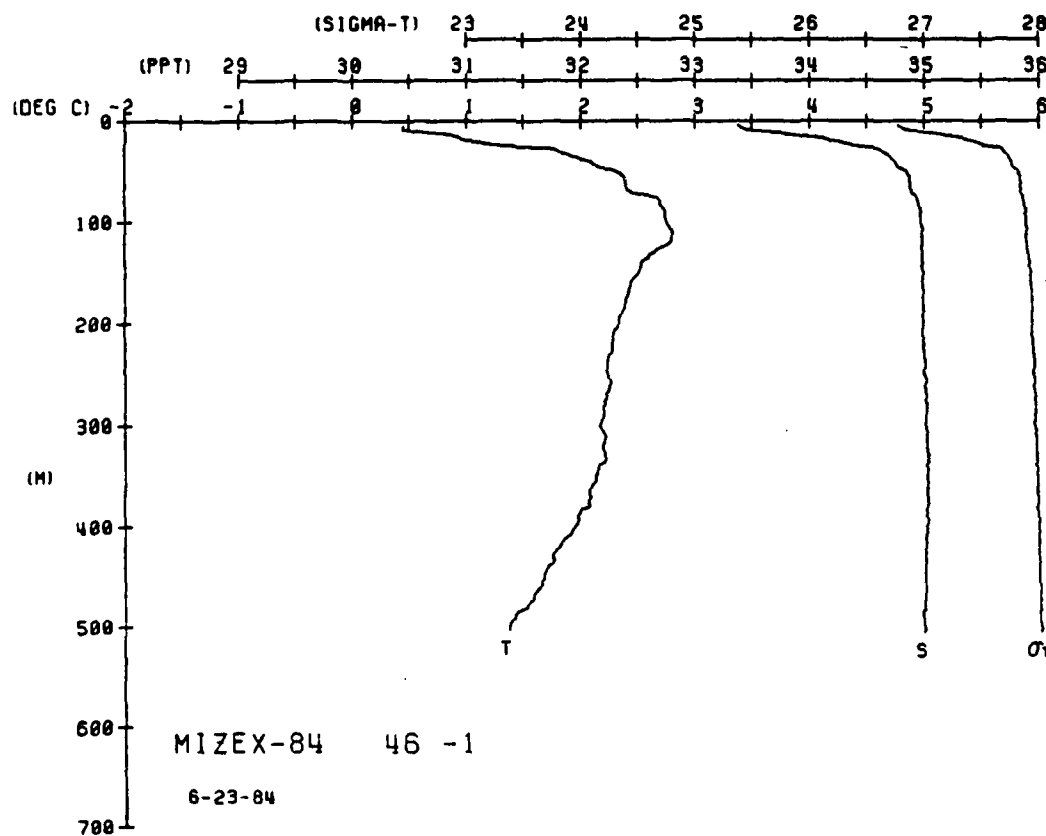
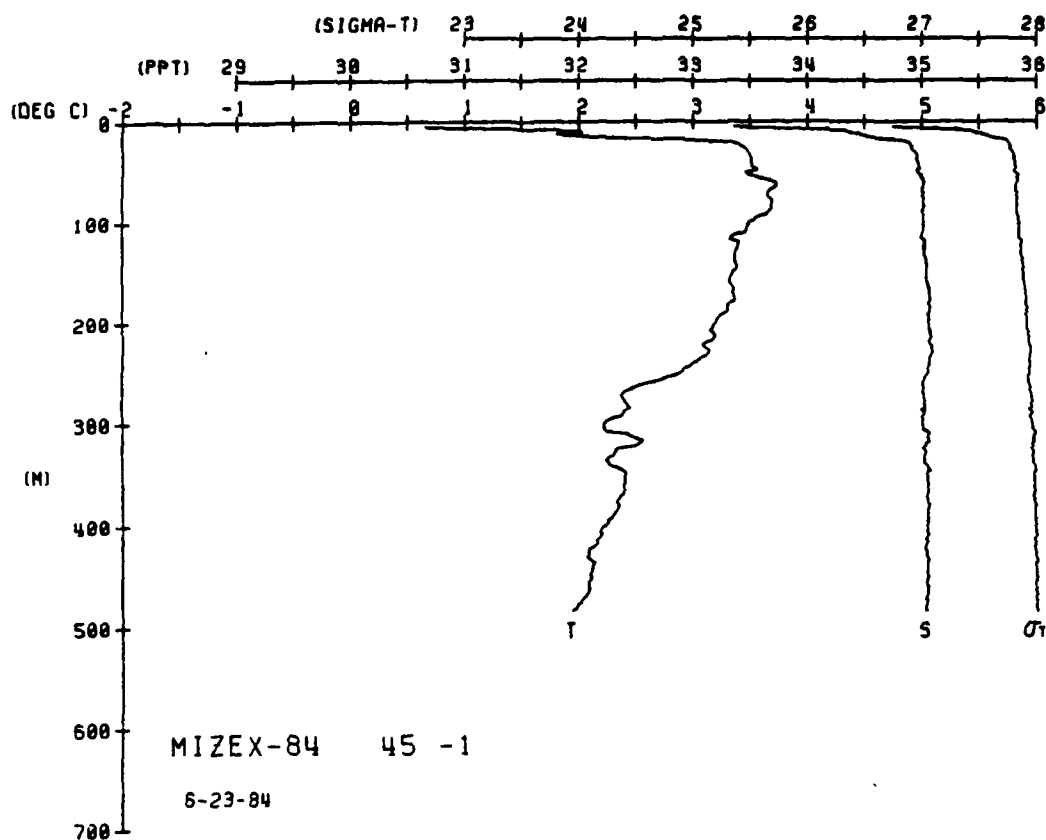


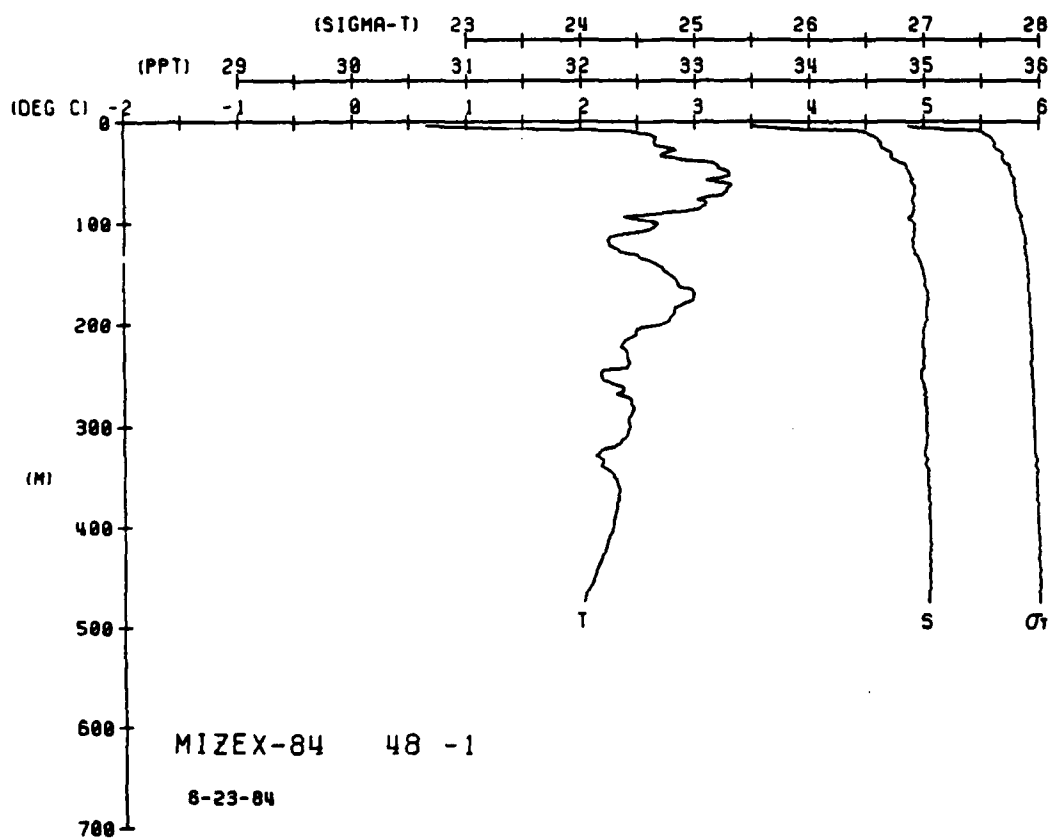
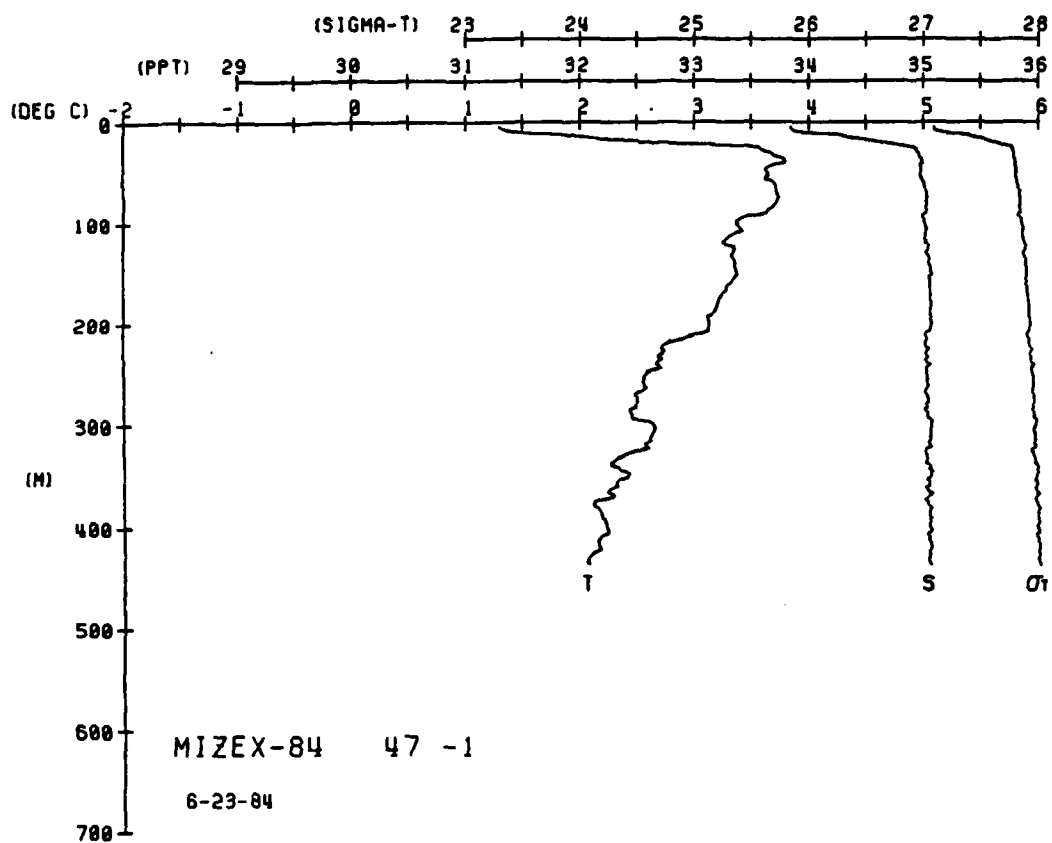
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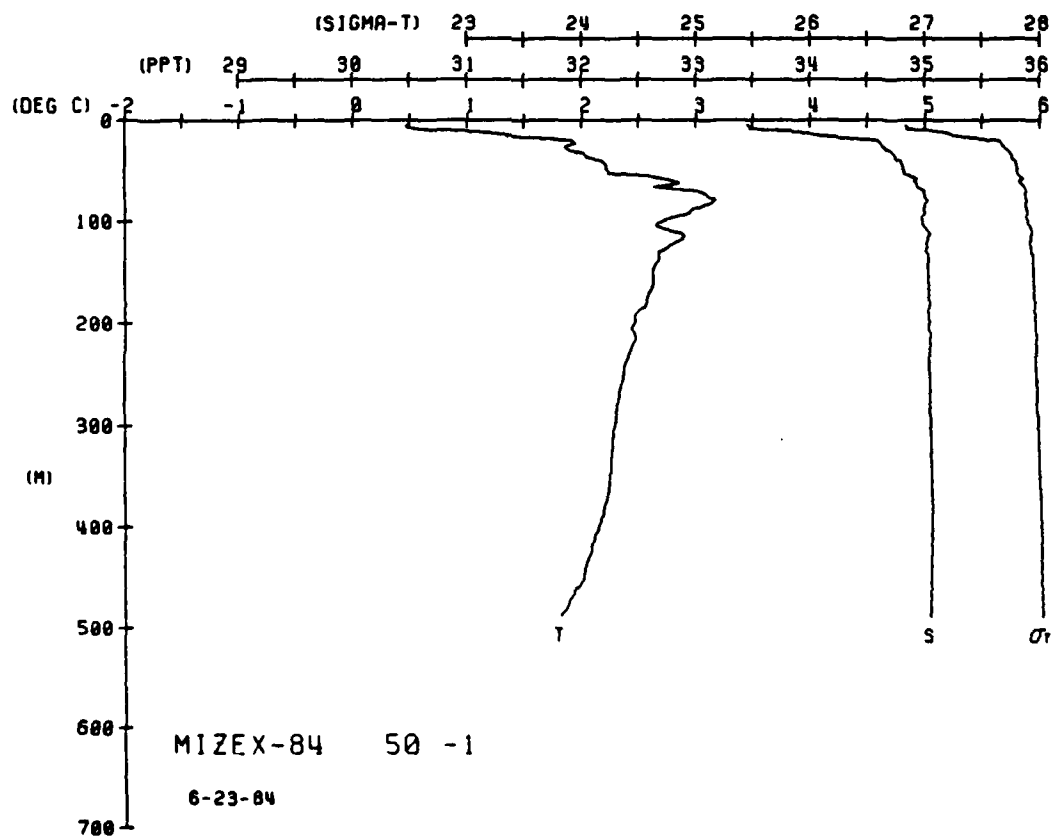
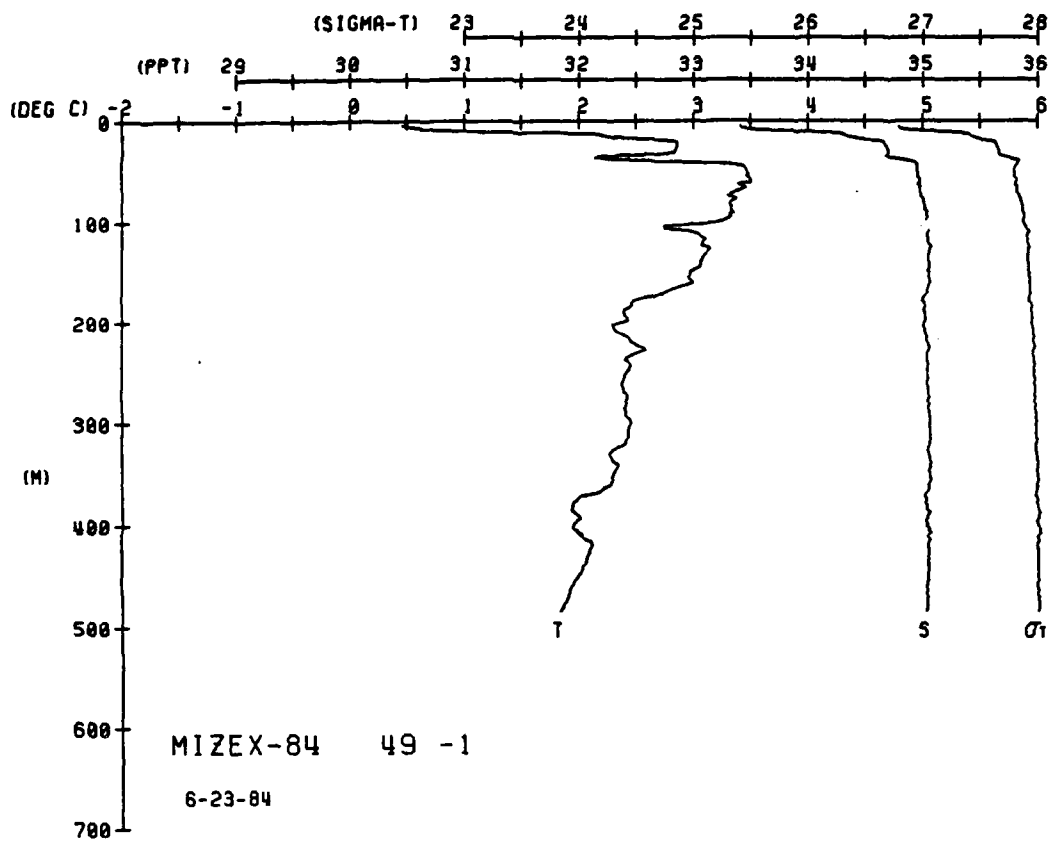
MIZEX-04 STATION 43(1) CTD 23/JUN/1984 1508 GMT CODE = 1
LAT = 79.9500N LNC = 6.7000E LTK = 150. LGER = 150.
RAIN TEMP = 0.0 BARM = 0.0 WIND = 0.0 SPEED = 0.0

```



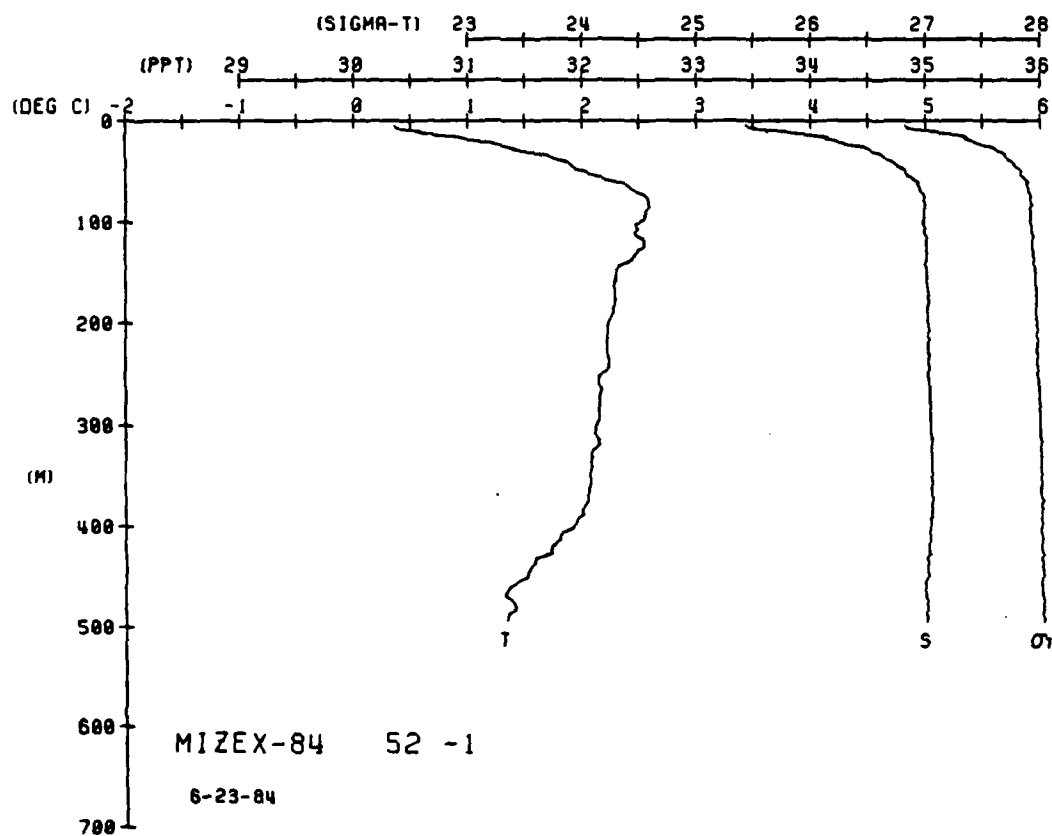
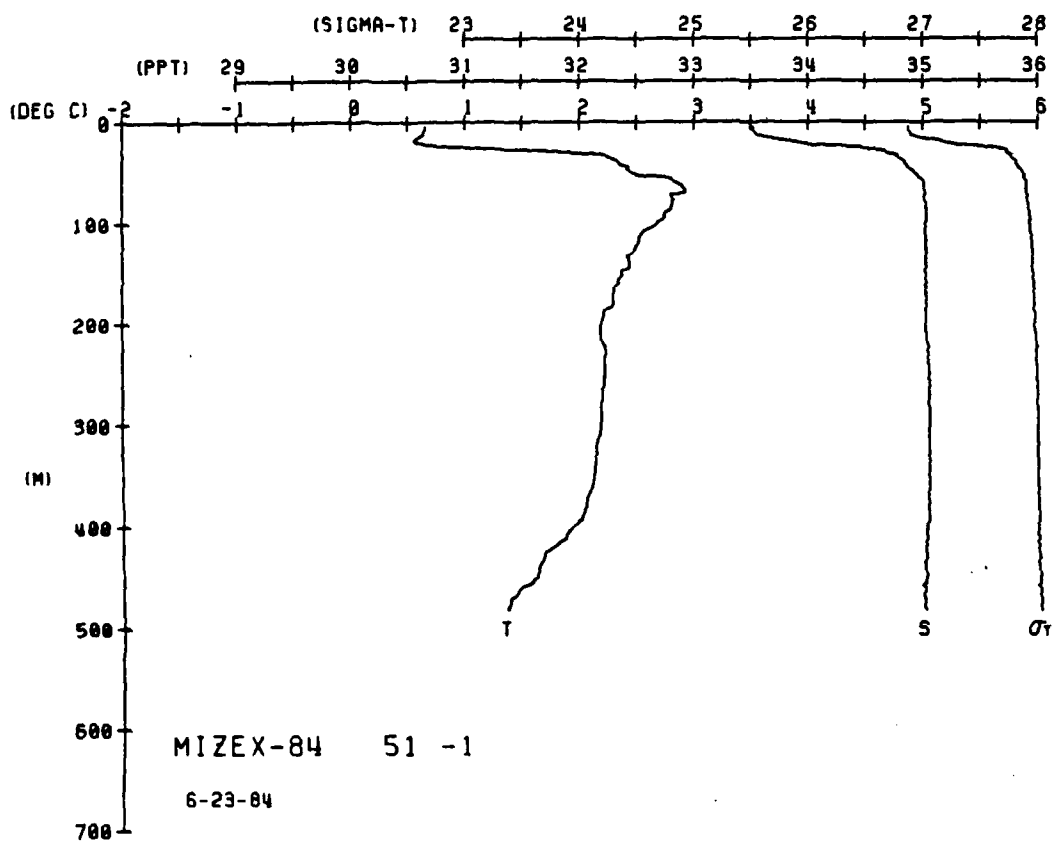






MIXEX-04 STATION 51(1) CTU 23/JUN/1984 1940 GMT CODE = 1
 LAT = 30.1033 LNG = 6.4667 E LTER = 150. LGEN = 150.
 AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

[illegible]



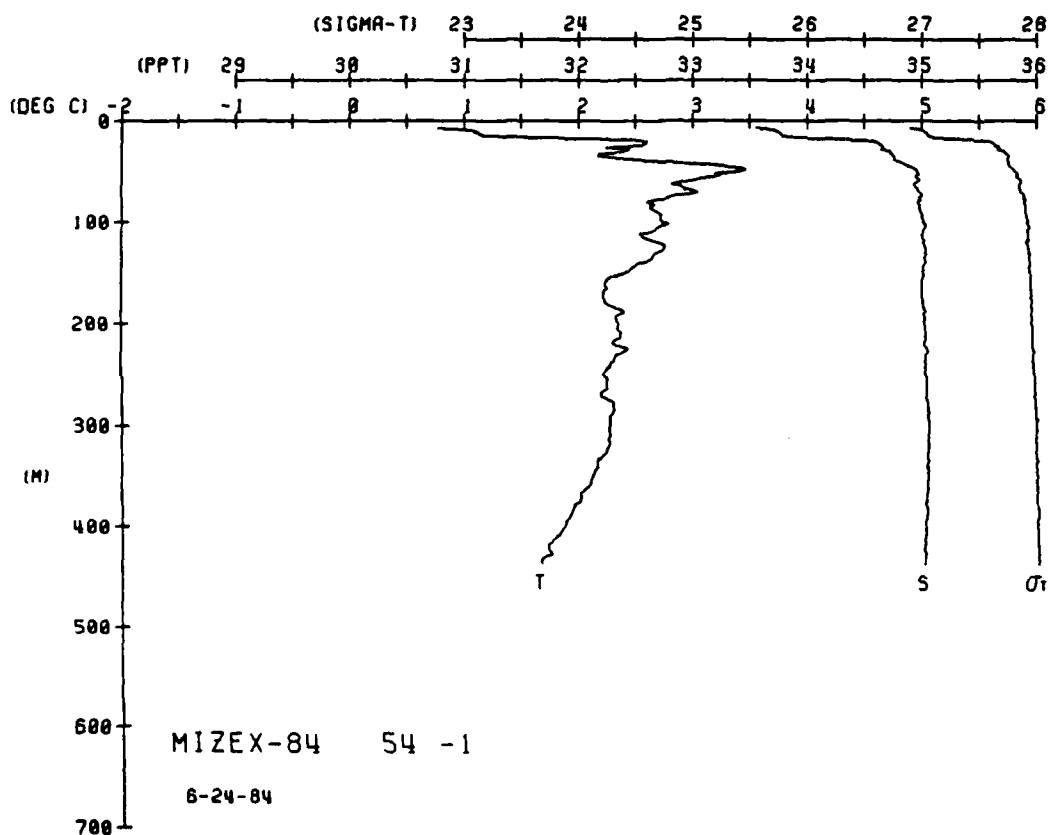
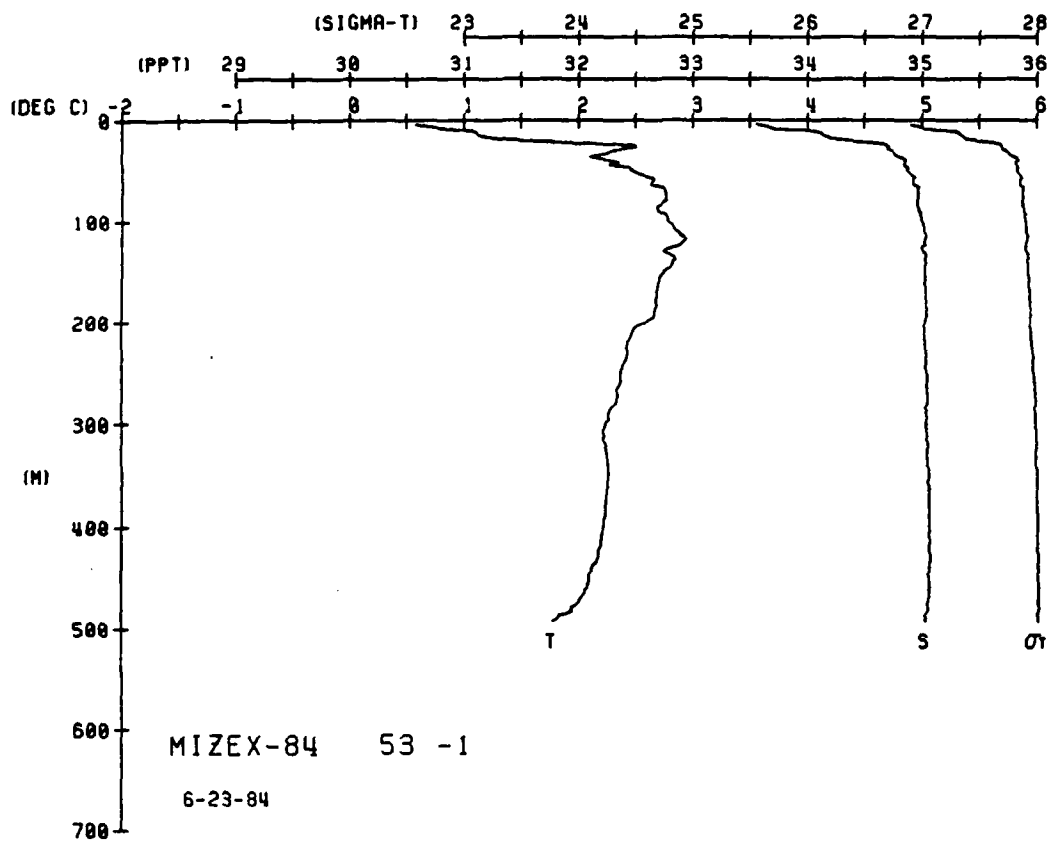
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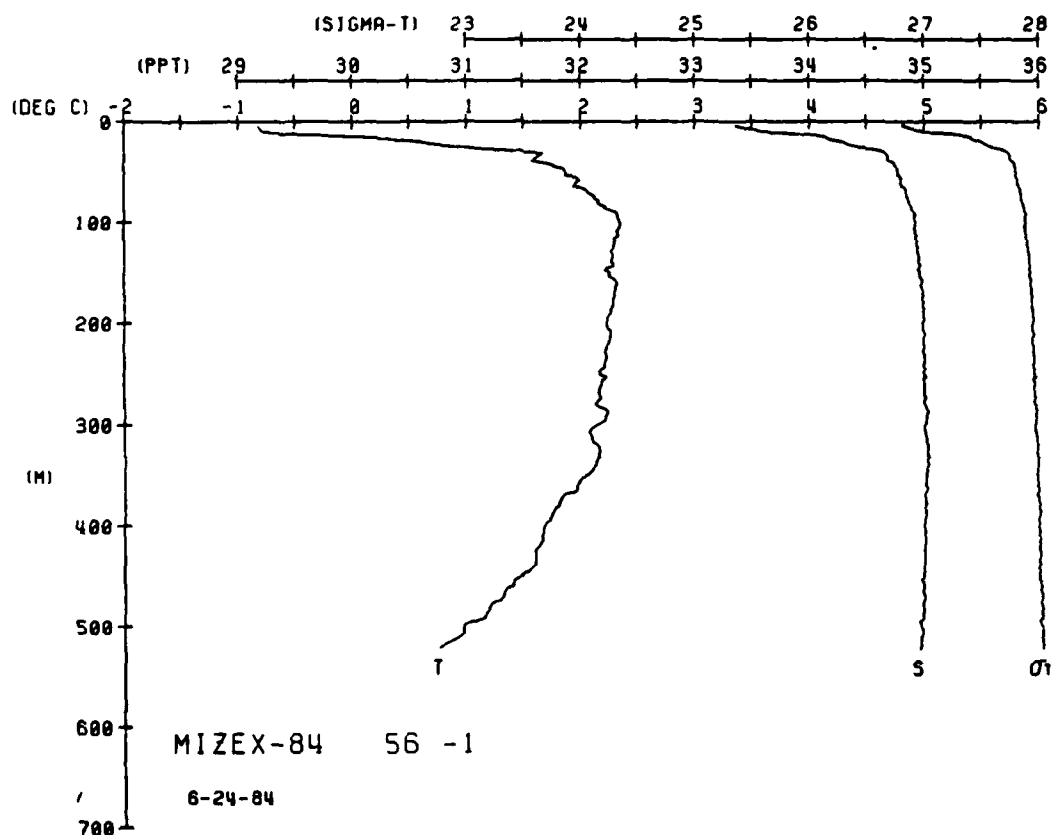
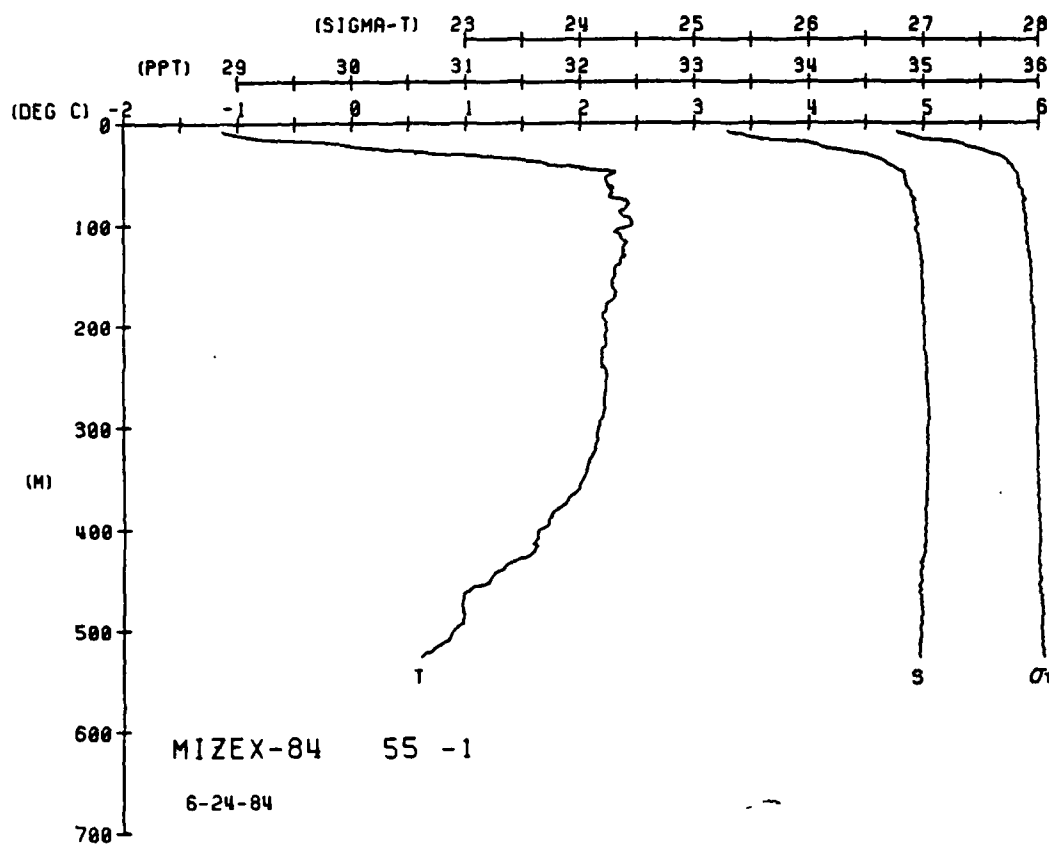
MIXEX-04 STATION 53(1) CTD 23/JUN/1984 2110 GMT CODE = 1
LAY = 00.1250M LMC = 6.2000E LTER = 300. LGER = 300.
AIR TEMP = 0.0 BARUM = 0.0 WIND = 0.0 SPED = 0.0

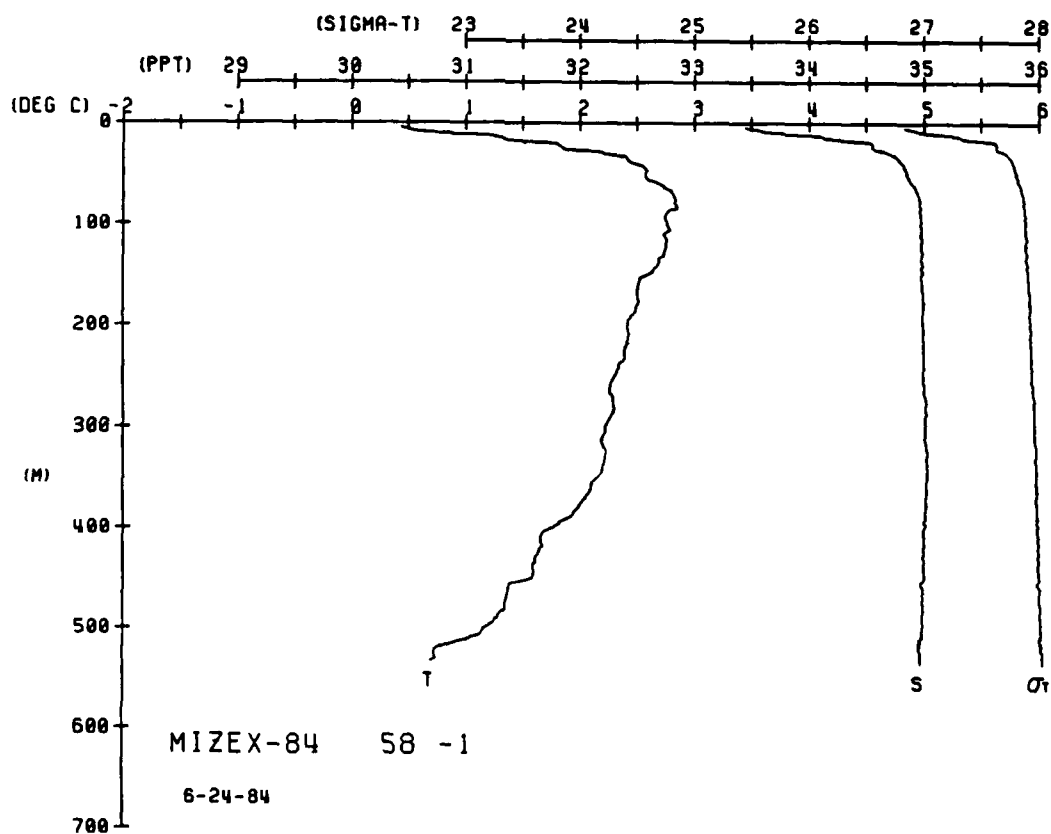
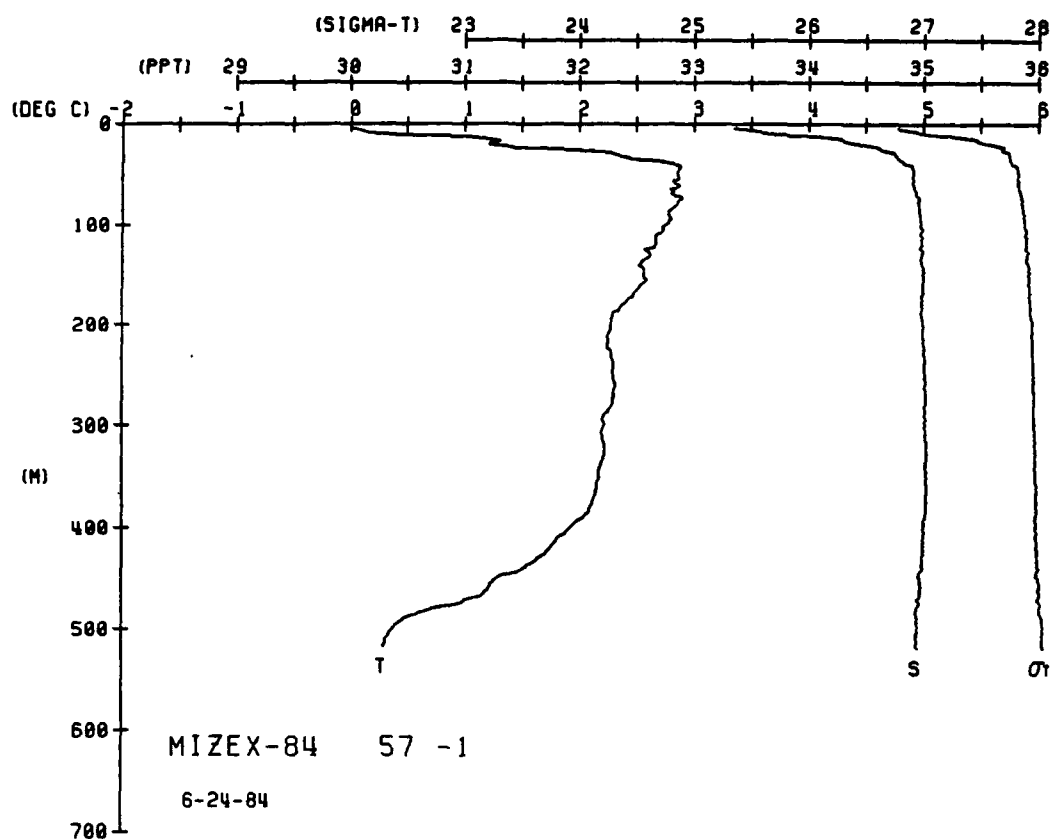
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DEPTH	TEMP	PTEMP	SALIN	SIG T	SPVOL	DYNHT	SOUND
10	10.0	10.0	35.0	1.020	1.0	1.0	1.0
20	10.0	10.0	35.0	1.020	1.0	1.0	1.0
30	10.0	10.0	35.0	1.020	1.0	1.0	1.0
40	10.0	10.0	35.0	1.020	1.0	1.0	1.0
50	10.0	10.0	35.0	1.020	1.0	1.0	1.0
60	10.0	10.0	35.0	1.020	1.0	1.0	1.0
70	10.0	10.0	35.0	1.020	1.0	1.0	1.0
80	10.0	10.0	35.0	1.020	1.0	1.0	1.0
90	10.0	10.0	35.0	1.020	1.0	1.0	1.0
100	10.0	10.0	35.0	1.020	1.0	1.0	1.0
110	10.0	10.0	35.0	1.020	1.0	1.0	1.0
120	10.0	10.0	35.0	1.020	1.0	1.0	1.0
130	10.0	10.0	35.0	1.020	1.0	1.0	1.0
140	10.0	10.0	35.0	1.020	1.0	1.0	1.0
150	10.0	10.0	35.0	1.020	1.0	1.0	1.0
160	10.0	10.0	35.0	1.020	1.0	1.0	1.0
170	10.0	10.0	35.0	1.020	1.0	1.0	1.0
180	10.0	10.0	35.0	1.020	1.0	1.0	1.0
190	10.0	10.0	35.0	1.020	1.0	1.0	1.0
200	10.0	10.0	35.0	1.020	1.0	1.0	1.0
210	10.0	10.0	35.0	1.020	1.0	1.0	1.0
220	10.0	10.0	35.0	1.020	1.0	1.0	1.0
230	10.0	10.0	35.0	1.020	1.0	1.0	1.0
240	10.0	10.0	35.0	1.020	1.0	1.0	1.0
250	10.0	10.0	35.0	1.020	1.0	1.0	1.0
260	10.0	10.0	35.0	1.020	1.0	1.0	1.0
270	10.0	10.0	35.0	1.020	1.0	1.0	1.0
280	10.0	10.0	35.0	1.020	1.0	1.0	1.0
290	10.0	10.0	35.0	1.020	1.0	1.0	1.0
300	10.0	10.0	35.0	1.020	1.0	1.0	1.0
310	10.0	10.0	35.0	1.020	1.0	1.0	1.0
320	10.0	10.0	35.0	1.020	1.0	1.0	1.0
330	10.0	10.0	35.0	1.020	1.0	1.0	1.0
340	10.0	10.0	35.0	1.020	1.0	1.0	1.0
350	10.0	10.0	35.0	1.020	1.0	1.0	1.0
360	10.0	10.0	35.0	1.020	1.0	1.0	1.0
370	10.0	10.0	35.0	1.020	1.0	1.0	1.0
380	10.0	10.0	35.0	1.020	1.0	1.0	1.0
390	10.0	10.0	35.0	1.020	1.0	1.0	1.0
400	10.0	10.0	35.0	1.020	1.0	1.0	1.0
410	10.0	10.0	35.0	1.020	1.0	1.0	1.0
420	10.0	10.0	35.0	1.020	1.0	1.0	1.0
430	10.0	10.0	35.0	1.020	1.0	1.0	1.0
440	10.0	10.0	35.0	1.020	1.0	1.0	1.0
450	10.0	10.0	35.0	1.020	1.0	1.0	1.0
460	10.0	10.0	35.0	1.020	1.0	1.0	1.0
470	10.0	10.0	35.0	1.020	1.0	1.0	1.0
480	10.0	10.0	35.0	1.020	1.0	1.0	1

[illegible]





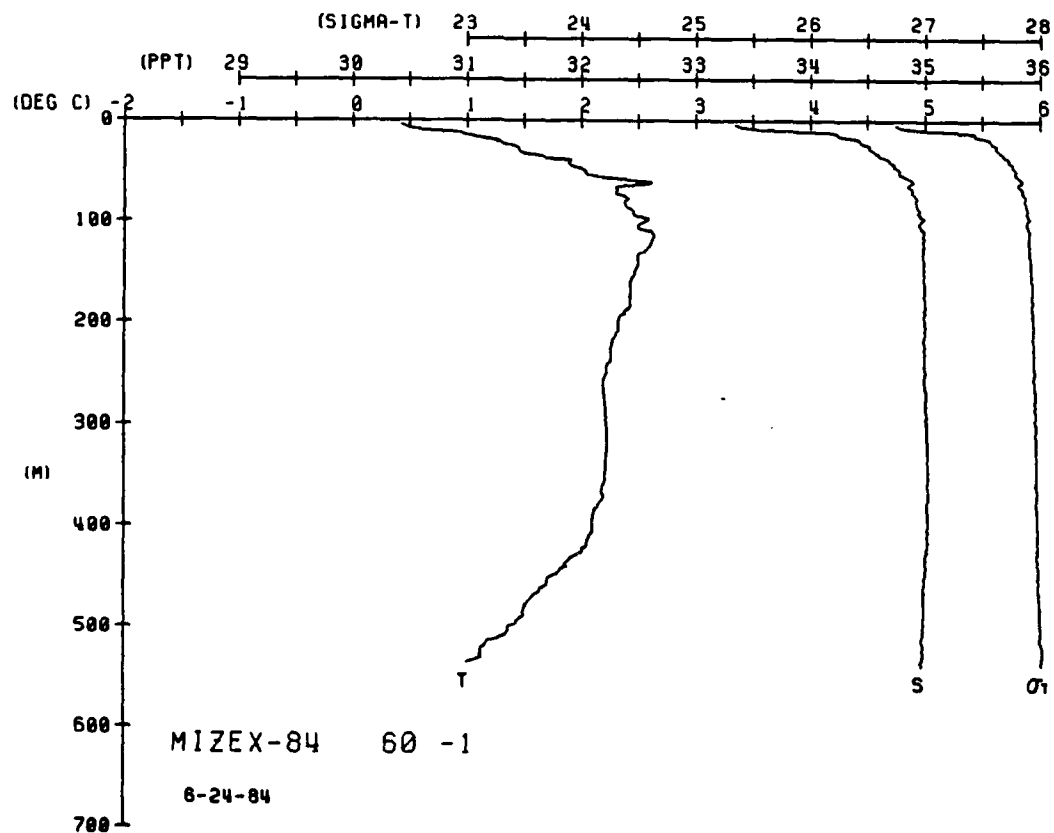
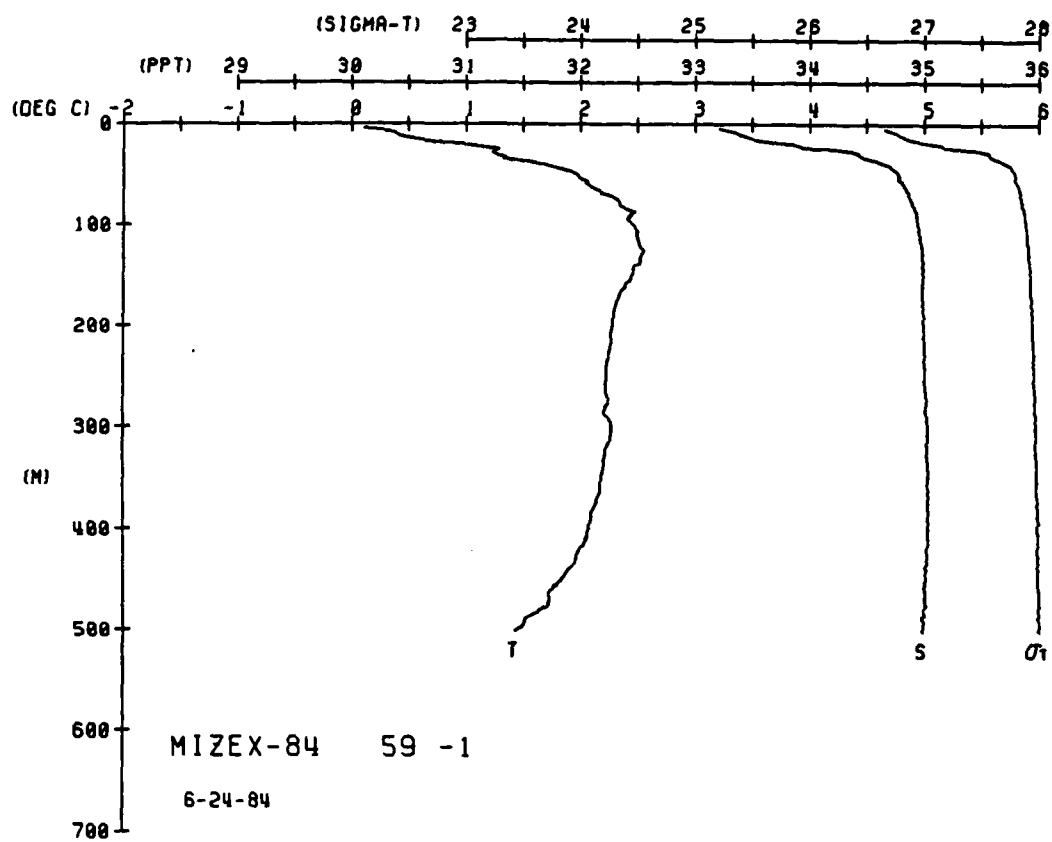


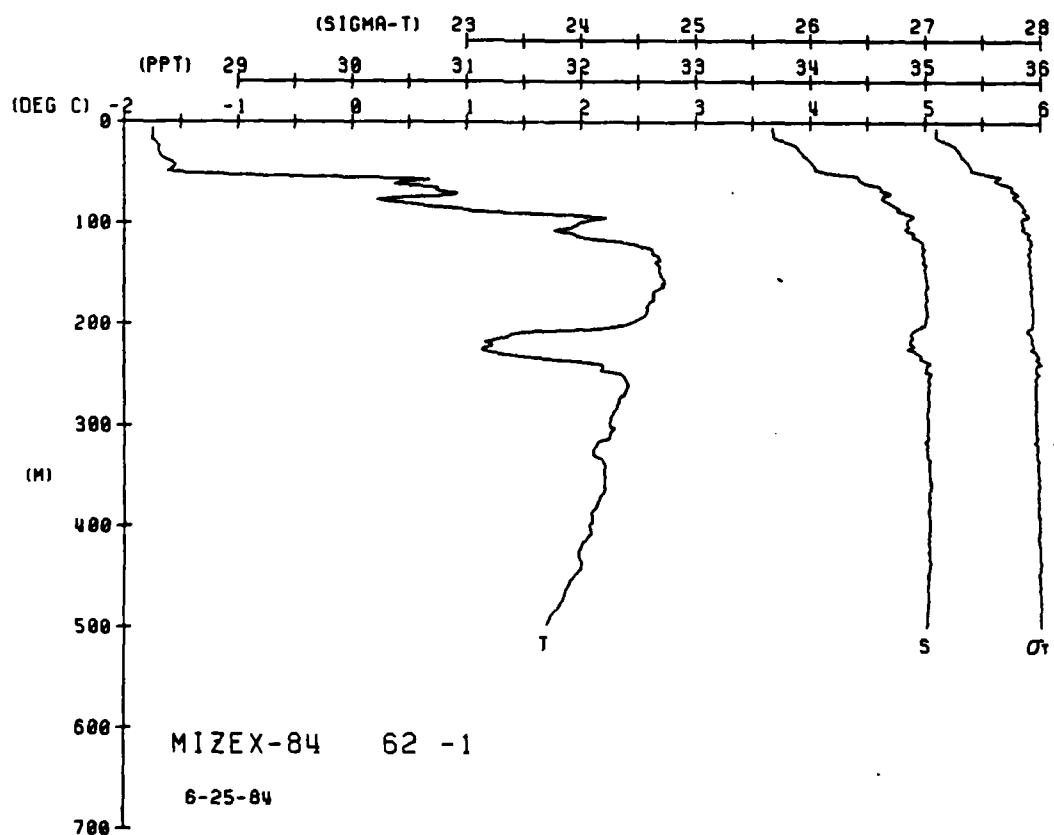
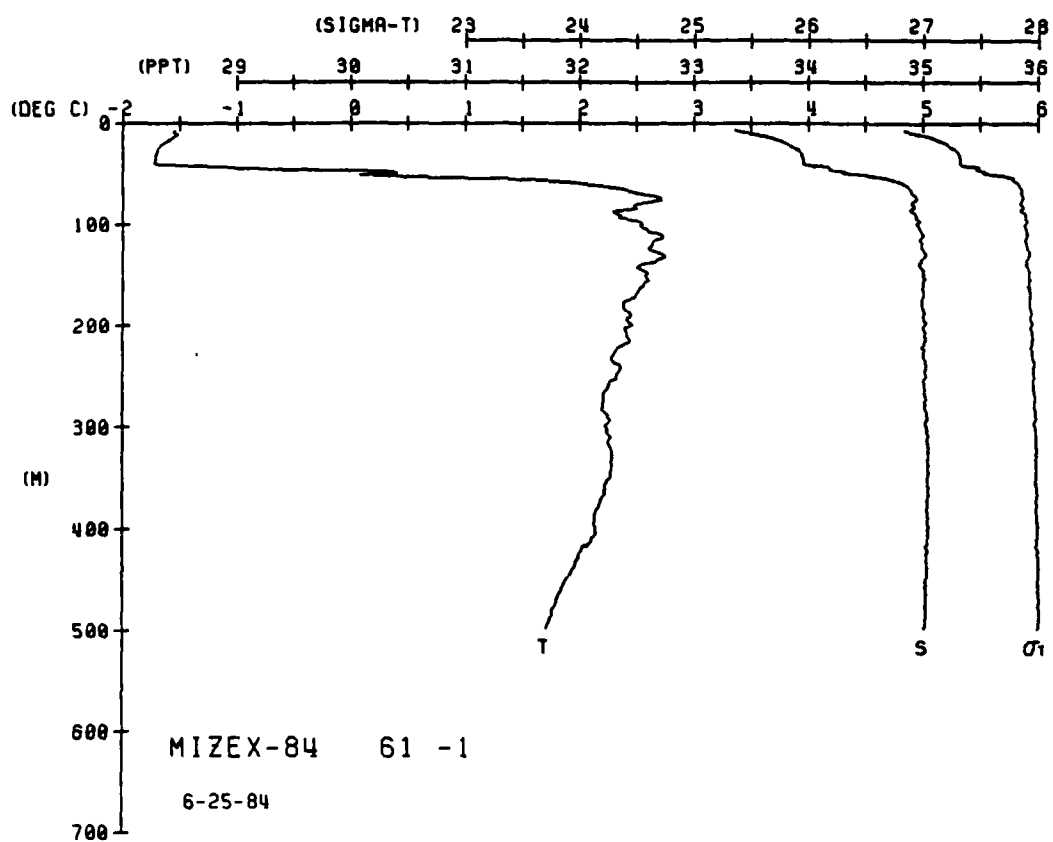
```

MIZEX-84 STATION 59(1) CTU 24/JUN/1984 1600 GMT CUDE = 1
LAY = 80.1550N LMG = 6.5400E LTER = 300. LGEM = 300.
RAIN TEMP = 0.0 BARDM = 0.0 WIND = 0.0 SPEED = 0.0

```

[illegible]

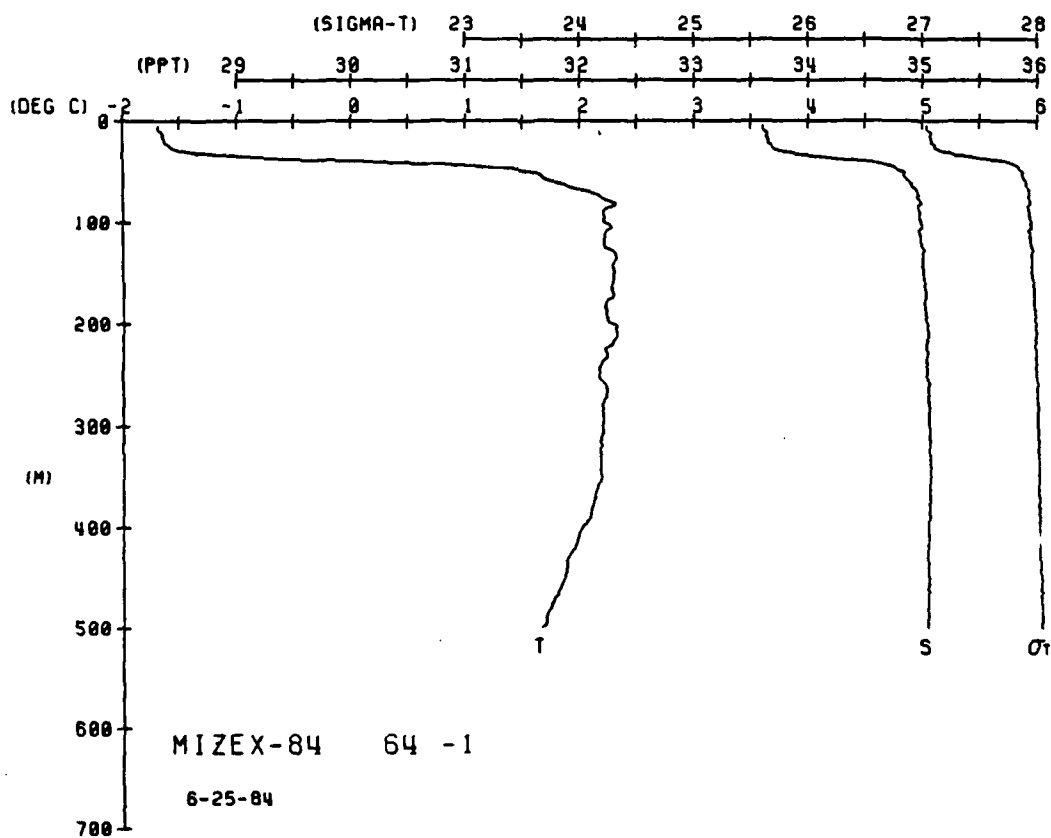
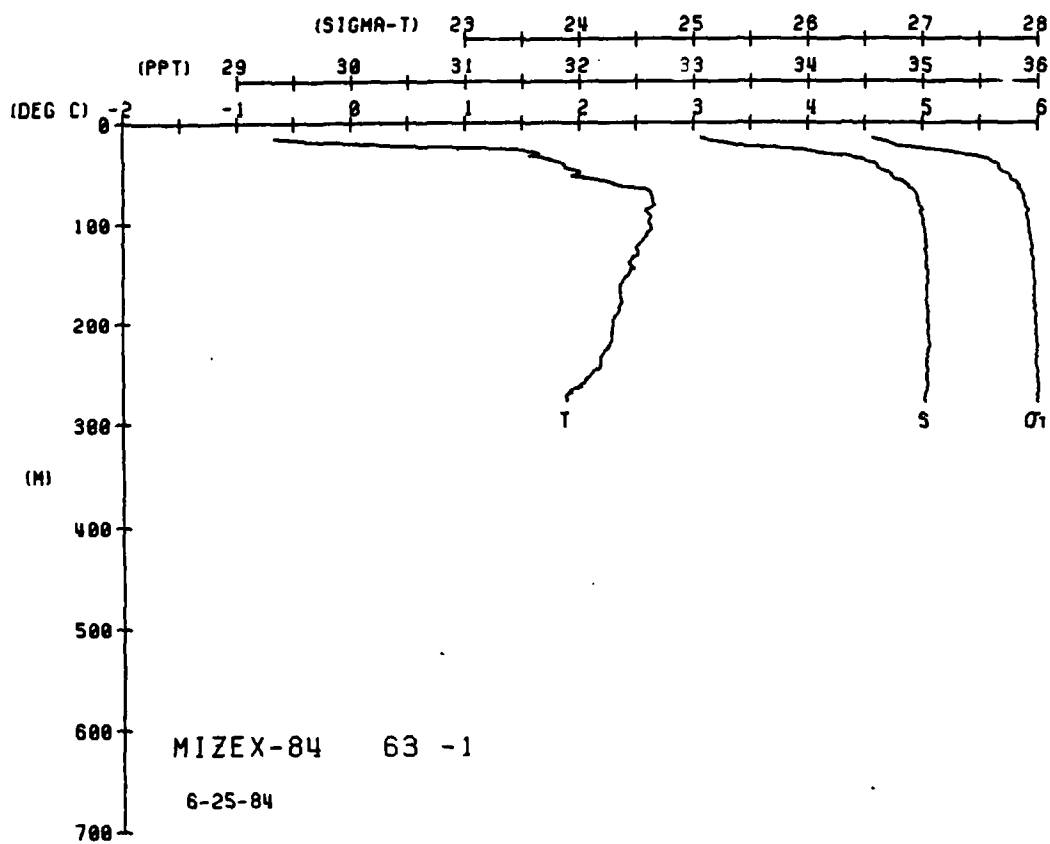


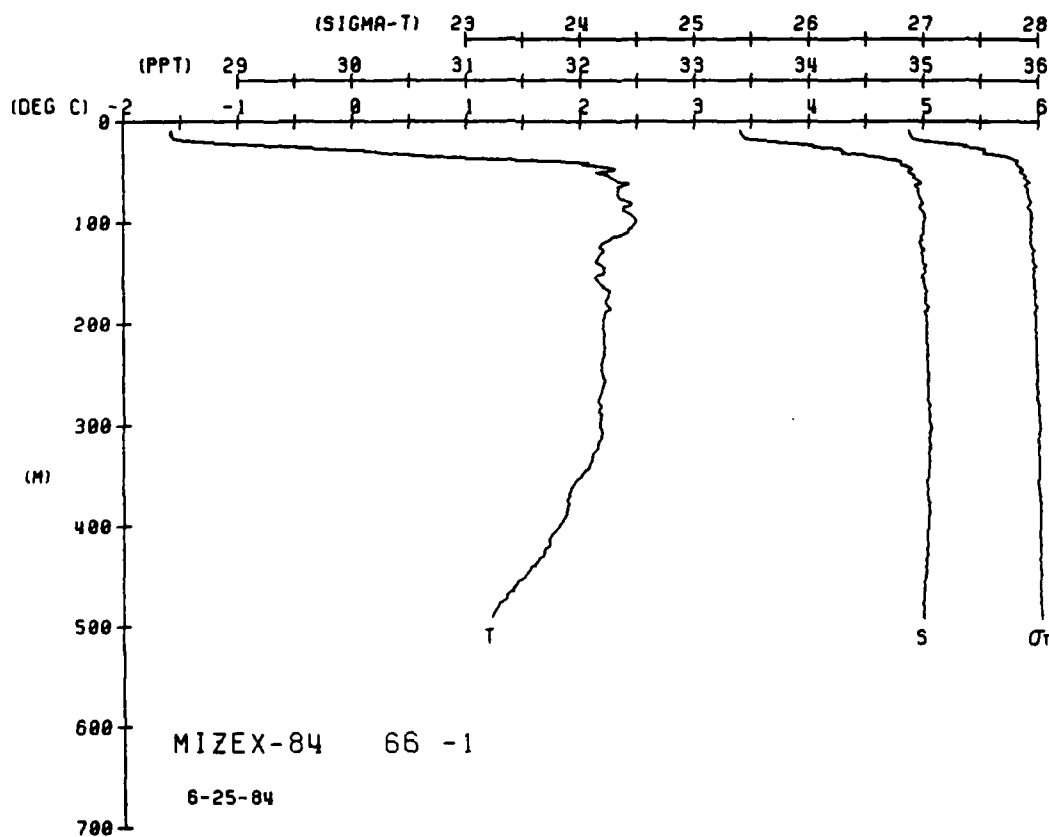
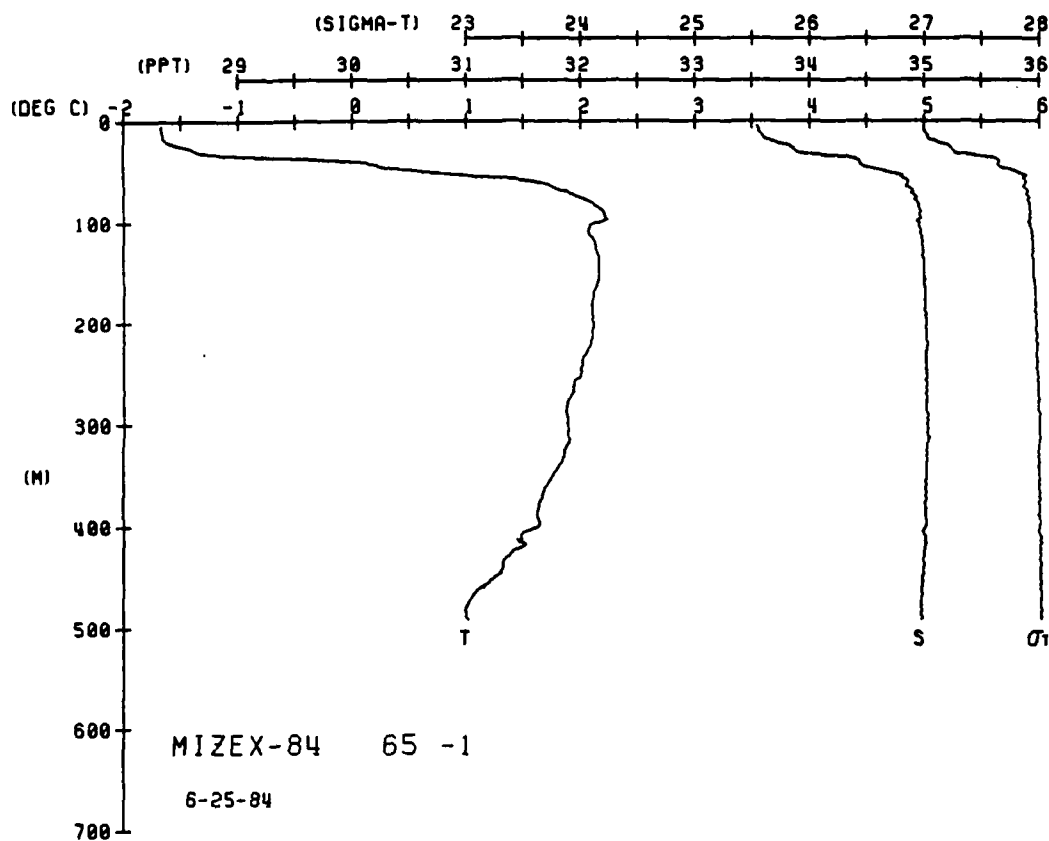


WIMPEX-04 STATION 64(1) CTD 25/JUN/1984 1034 GMT CUBE = 1
LAT = 60.833N LNG = 2.7500E LTK = 150, LGEN = 150
AIR TEMP = 0.0 BARUM = 0.0 WIND = 0.0 SPEED = 0.0

The figure displays a 12x12 grid of 144 small plots, each representing a different variable over time. The variables are arranged in rows: SOUND, DYNHI, SPVUL, SIG T, SALIN, PTEP, TEMP, and DEPTH. Each plot shows a time series from 0000 to 0011. The plots are arranged in a grid where the first row contains 12 plots for SOUND, the second row for DYNHI, and so on, up to the eighth row for DEPTH. Each plot shows a time series of data points, with some plots having labels for the variables. The plots are arranged in a grid where the first row contains 12 plots for SOUND, the second row for DYNHI, and so on, up to the eighth row for DEPTH. Each plot shows a time series of data points, with some plots having labels for the variables.

[illegible]





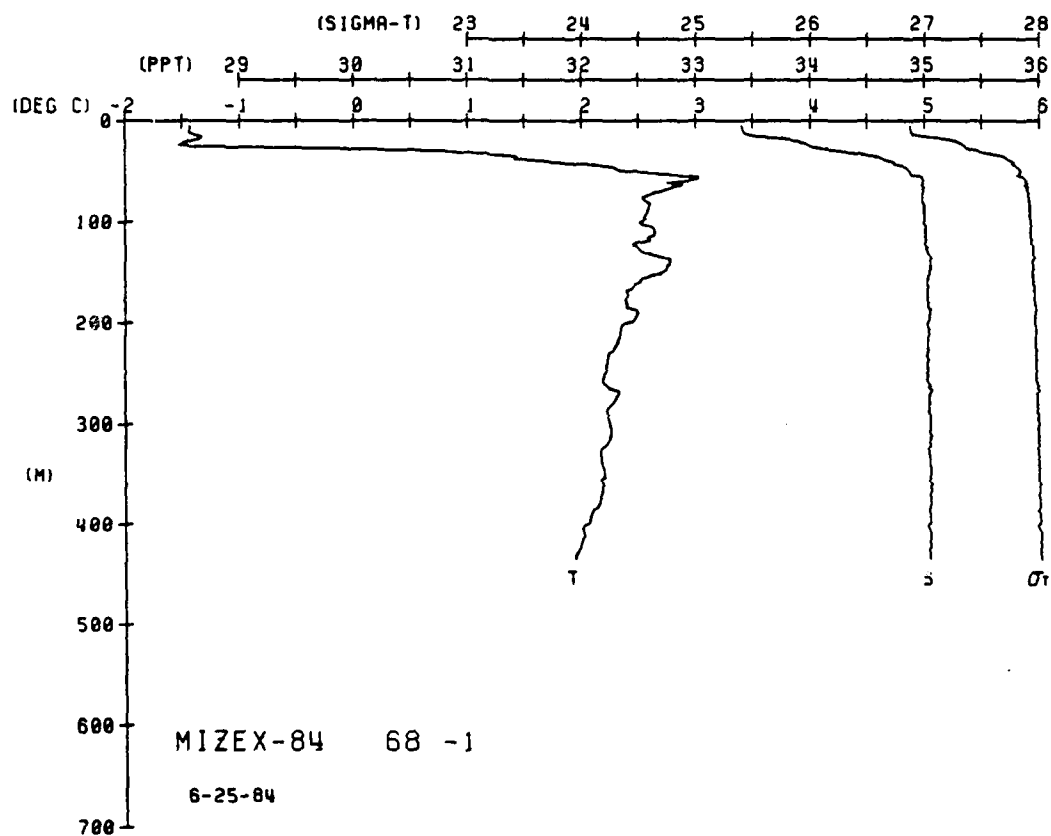
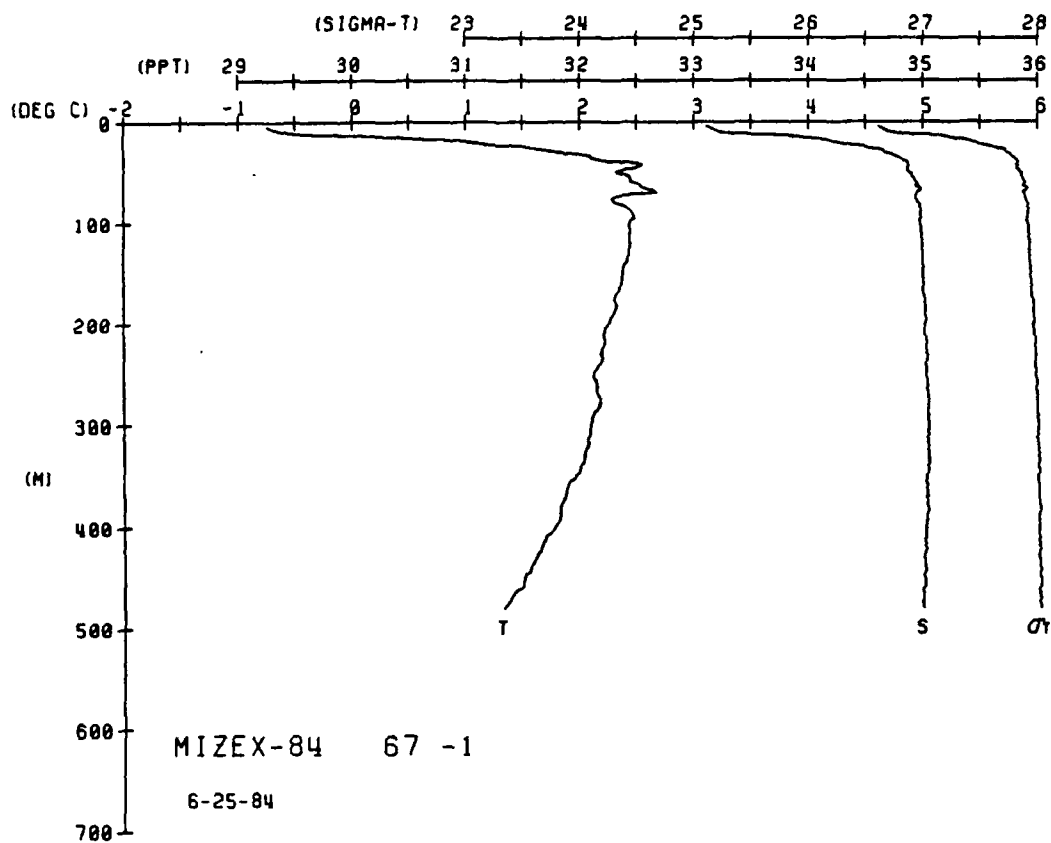
```

MIXEX-84 STATION 67(1) CITY 25/JUN/1984 1432 GMT CODE = 1
LAT = 80.5000 LNG = 3.8333 E LTER = 150. LGEN = 150.
RAIN TEMP = 0.0 BAROM = 0.0 MINU = 0.0 SPEED = 0.0

```

DEPTH	TEMP	PTEMP	SALIN	SIG T	SPVOL	WYNHT	SOUND
10	10.0	10.0	35.0	0.0	0.0	0.0	0.0
20	10.0	10.0	35.0	0.0	0.0	0.0	0.0
30	10.0	10.0	35.0	0.0	0.0	0.0	0.0
40	10.0	10.0	35.0	0.0	0.0	0.0	0.0
50	10.0	10.0	35.0	0.0	0.0	0.0	0.0
60	10.0	10.0	35.0	0.0	0.0	0.0	0.0
70	10.0	10.0	35.0	0.0	0.0	0.0	0.0
80	10.0	10.0	35.0	0.0	0.0	0.0	0.0
90	10.0	10.0	35.0	0.0	0.0	0.0	0.0
100	10.0	10.0	35.0	0.0	0.0	0.0	0.0
110	10.0	10.0	35.0	0.0	0.0	0.0	0.0
120	10.0	10.0	35.0	0.0	0.0	0.0	0.0
130	10.0	10.0	35.0	0.0	0.0	0.0	0.0
140	10.0	10.0	35.0	0.0	0.0	0.0	0.0
150	10.0	10.0	35.0	0.0	0.0	0.0	0.0
160	10.0	10.0	35.0	0.0	0.0	0.0	0.0
170	10.0	10.0	35.0	0.0	0.0	0.0	0.0
180	10.0	10.0	35.0	0.0	0.0	0.0	0.0
190	10.0	10.0	35.0	0.0	0.0	0.0	0.0
200	10.0	10.0	35.0	0.0	0.0	0.0	0.0
210	10.0	10.0	35.0	0.0	0.0	0.0	0.0
220	10.0	10.0	35.0	0.0	0.0	0.0	0.0
230	10.0	10.0	35.0	0.0	0.0	0.0	0.0
240	10.0	10.0	35.0	0.0	0.0	0.0	0.0
250	10.0	10.0	35.0	0.0	0.0	0.0	0.0
260	10.0	10.0	35.0	0.0	0.0	0.0	0.0
270	10.0	10.0	35.0	0.0	0.0	0.0	0.0
280	10.0	10.0	35.0	0.0	0.0	0.0	0.0
290	10.0	10.0	35.0	0.0	0.0	0.0	0.0
300	10.0	10.0	35.0	0.0	0.0	0.0	0.0
310	10.0	10.0	35.0	0.0	0.0	0.0	0.0
320	10.0	10.0	35.0	0.0	0.0	0.0	0.0
330	10.0	10.0	35.0	0.0	0.0	0.0	0.0
340	10.0	10.0	35.0	0.0	0.0	0.0	0.0
350	10.0	10.0	35.0	0.0	0.0	0.0	0.0
360	10.0	10.0	35.0	0.0	0.0	0.0	0.0
370	10.0	10.0	35.0	0.0	0.0	0.0	0.0
380	10.0	10.0	35.0	0.0	0.0	0.0	0.0
390	10.0	10.0	35.0	0.0	0.0	0.0	0.0
400	10.0	10.0	35.0	0.0	0.0	0.0	0.0
410	10.0	10.0	35.0	0.0	0.0	0.0	0.0
420	10.0	10.0	35.0	0.0	0.0	0.0	0.0
430	10.0	10.0	35.0	0.0	0.0	0.0	0.0
440	10.0	10.0	35.0	0.0	0.0	0.0	0.0
450	10.0	10.0	35.0	0.0	0.0	0.0	0.0
460	10.0	10.0	35.0	0.0	0.0	0.0	0.0
470	10.0	10.0	35.0	0.0	0.0	0.0	0.0
480	10.0	10.0	35.0	0.0	0.0	0.0	0.0
490	10.0	10.0	35.0	0.0	0.0	0.0	0.0
500	10.0	10.0	35.0	0.0	0.0	0.0	0.0
510	10.0	10.0	35.0	0.0	0.0	0.0	0.0
520	10.0	10.0	35.0	0.0	0.0	0.0	0.0
530	10.0	10.0	35.0	0.0	0.0	0.0	0.0
540	10.0	10.0	35.0	0.0	0.0	0.0	0.0
550	10.0	10.0	35.0	0.0	0.0	0.0	0.0
560	10.0	10.0	35.0	0.0	0.0	0.0	

[illegible]



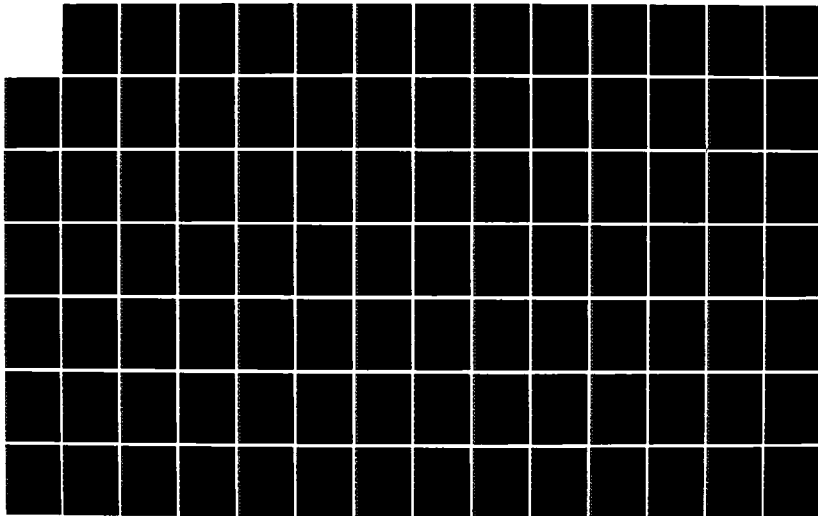
AD-A163 096

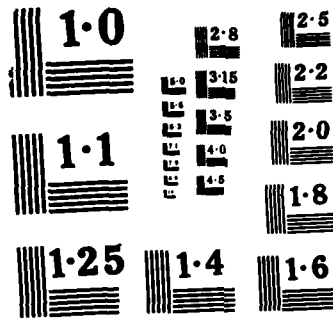
MARGINAL ICE ZONE EXPERIMENT - 1984 PHYSICAL
OCEANOGRAPHY REPORT: USNS LY. (U) LAMONT-DOHERTY
GEOLOGICAL OBSERVATORY PALISADES NY T O HANLEY DEC 85
LDGO-85-7 N00014-84-C-0132 F/G 8/10

2/4

UNCLASSIFIED

NL

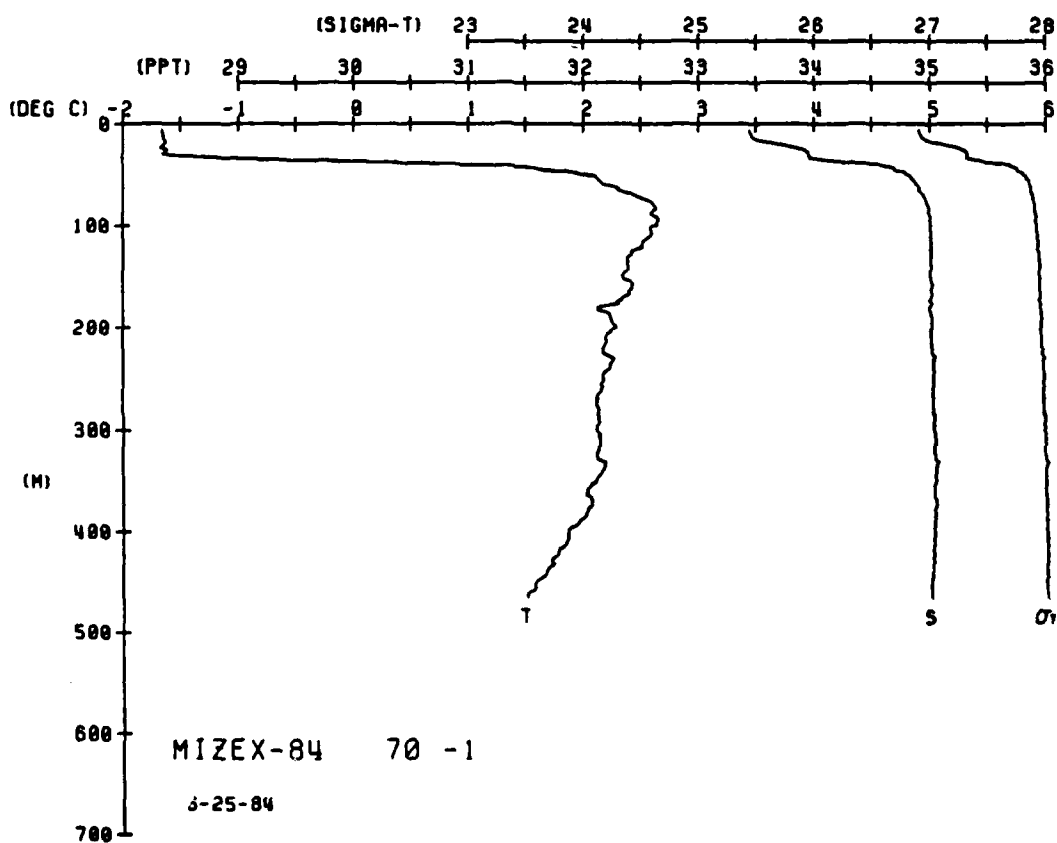
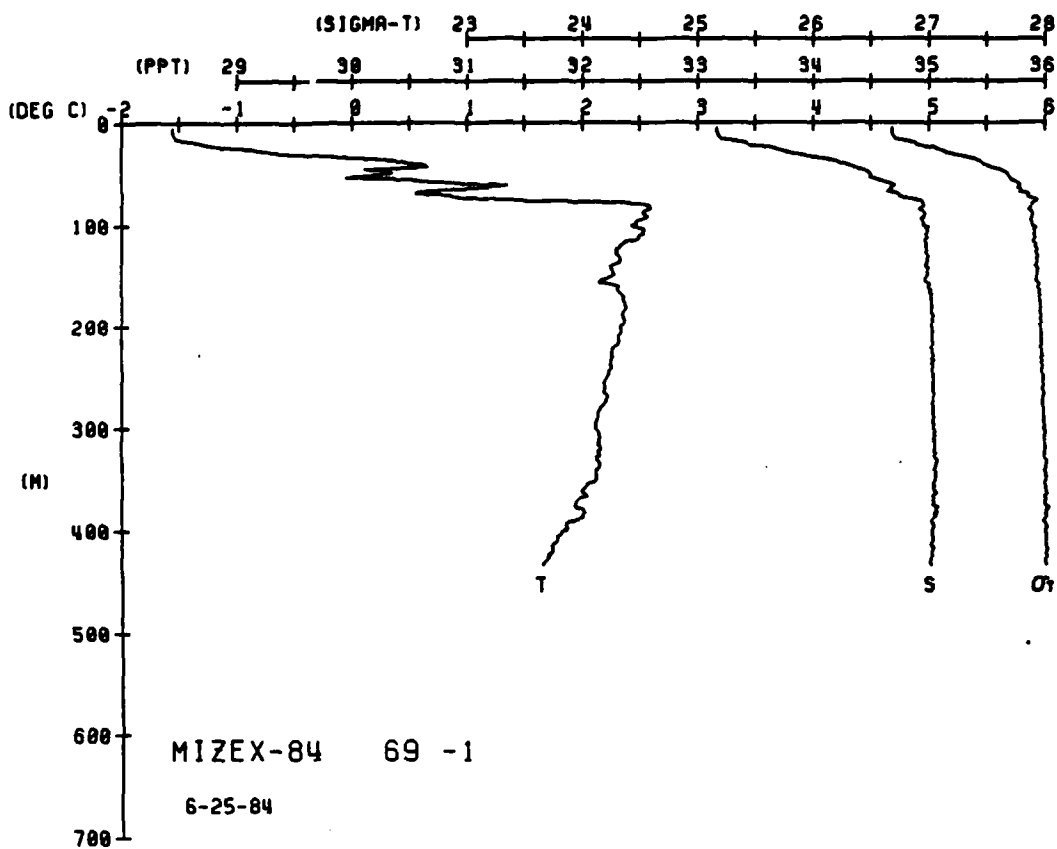


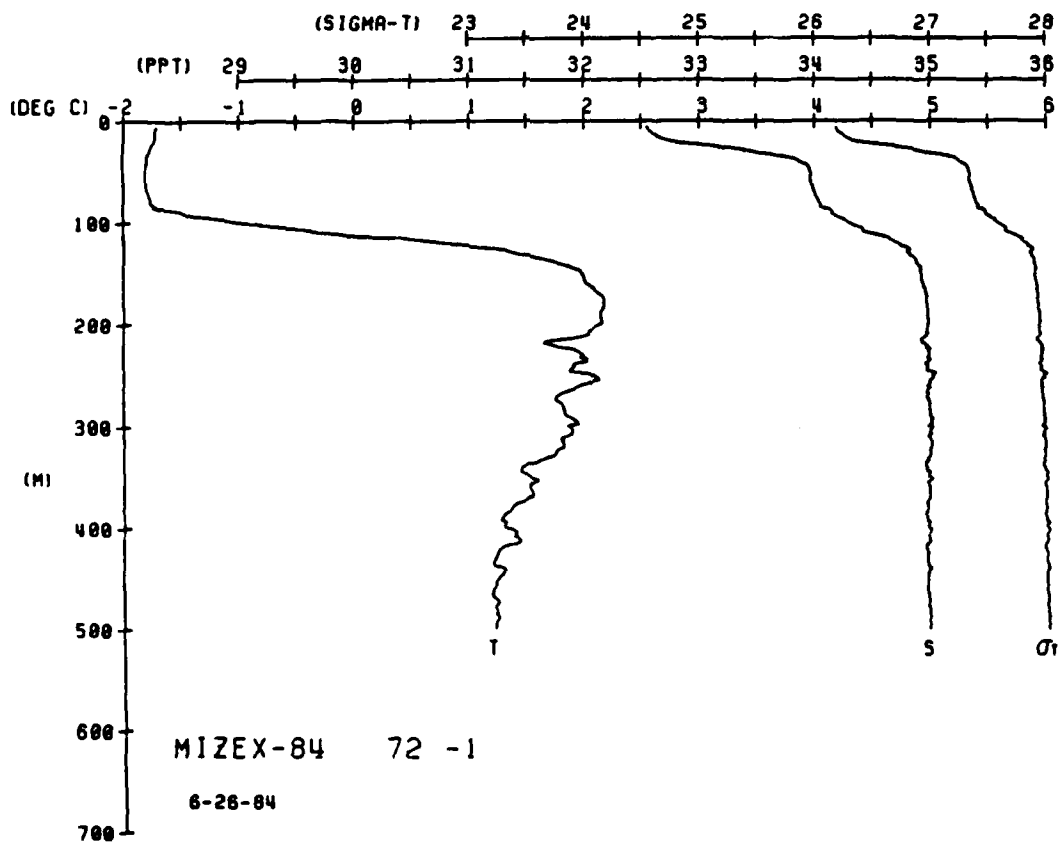
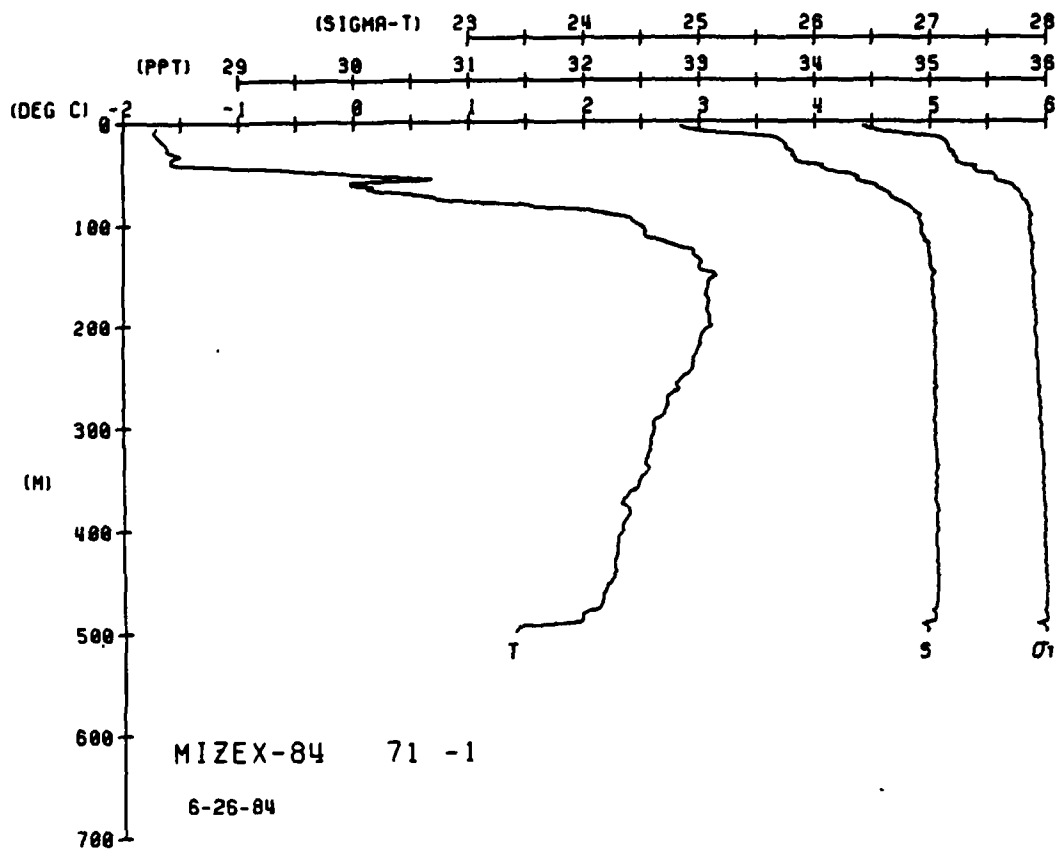


NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

MIXEX-84 STATION 70(1) CTD 25/JUN/1984 1730 GMT CODE = 1
 LAT = 80.6762N LMG = 2.9517E LTER = 30 LGR = 30
 AIR TEMP = 0.0 BAKRM = 0.0 WIND = 0.0 SPEED = 0.0

[illegible]





WIXEL-04 STATION 13(1) CTD 26/JUN/1994 1126 GMT CODE = 1
LAT = 81.083N LNC = 1.1009E LTR = 300. LGR = 300.
IN TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

SOUND

SYNTH

SPVCL

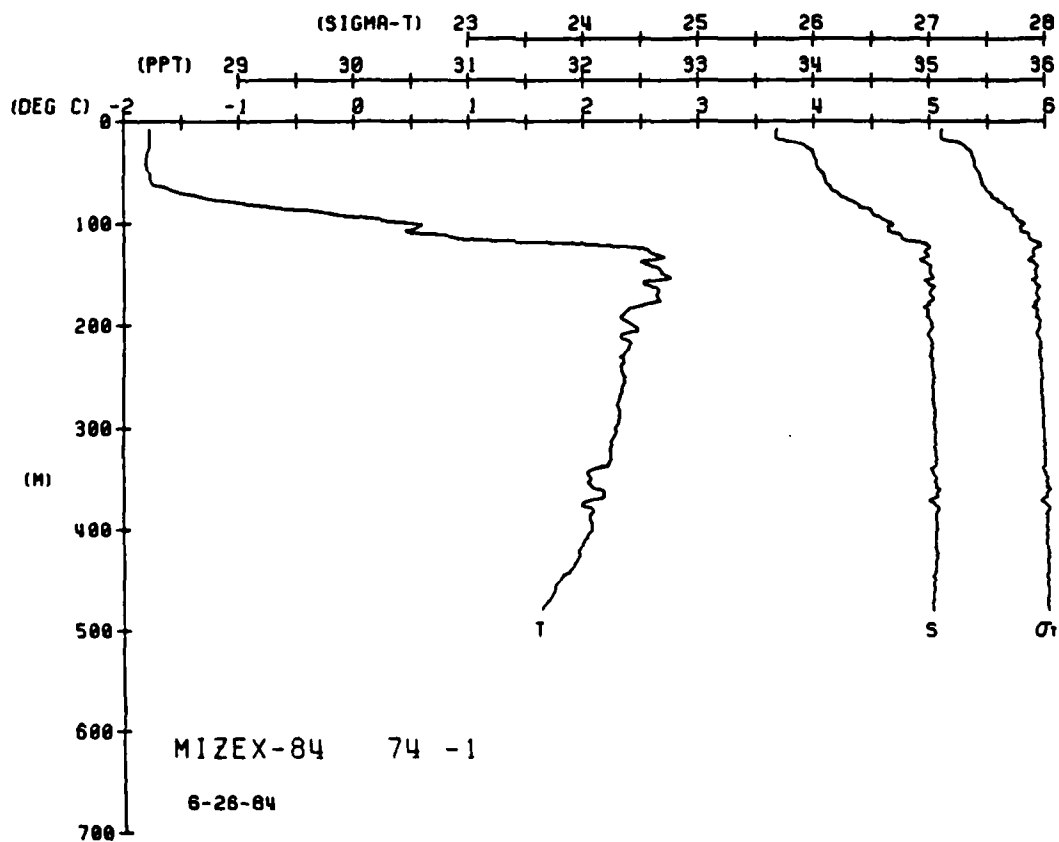
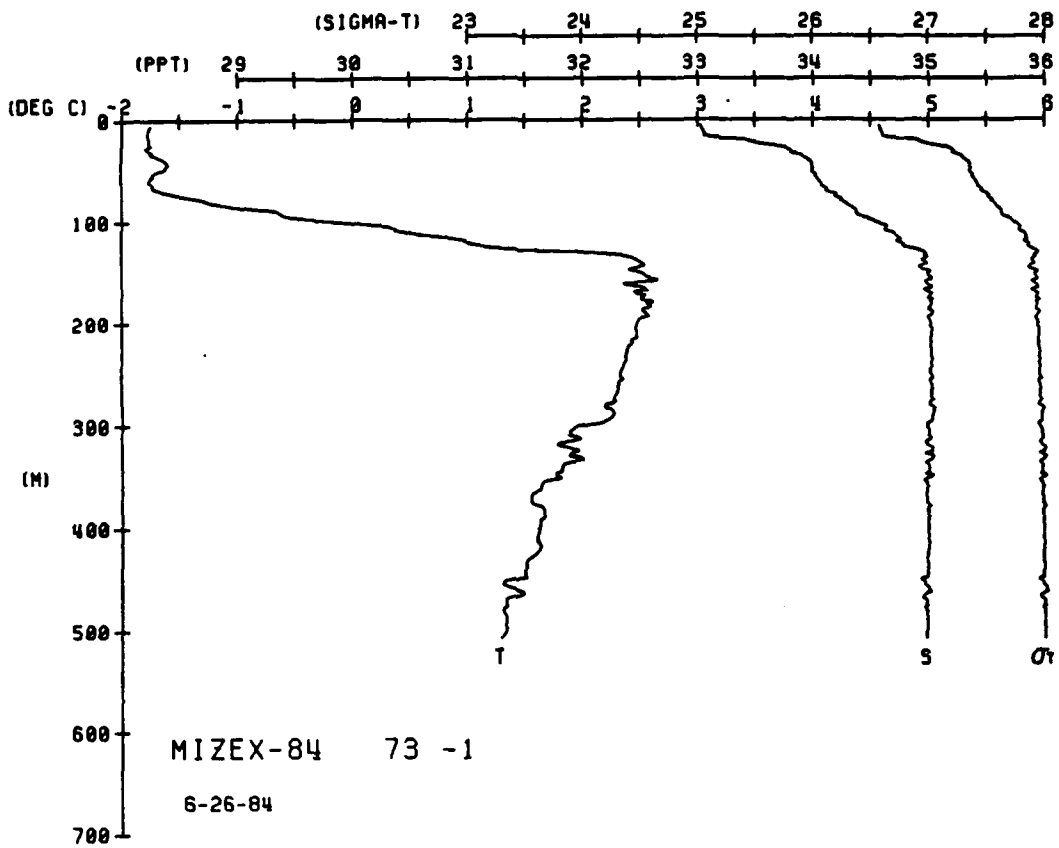
SIG 1

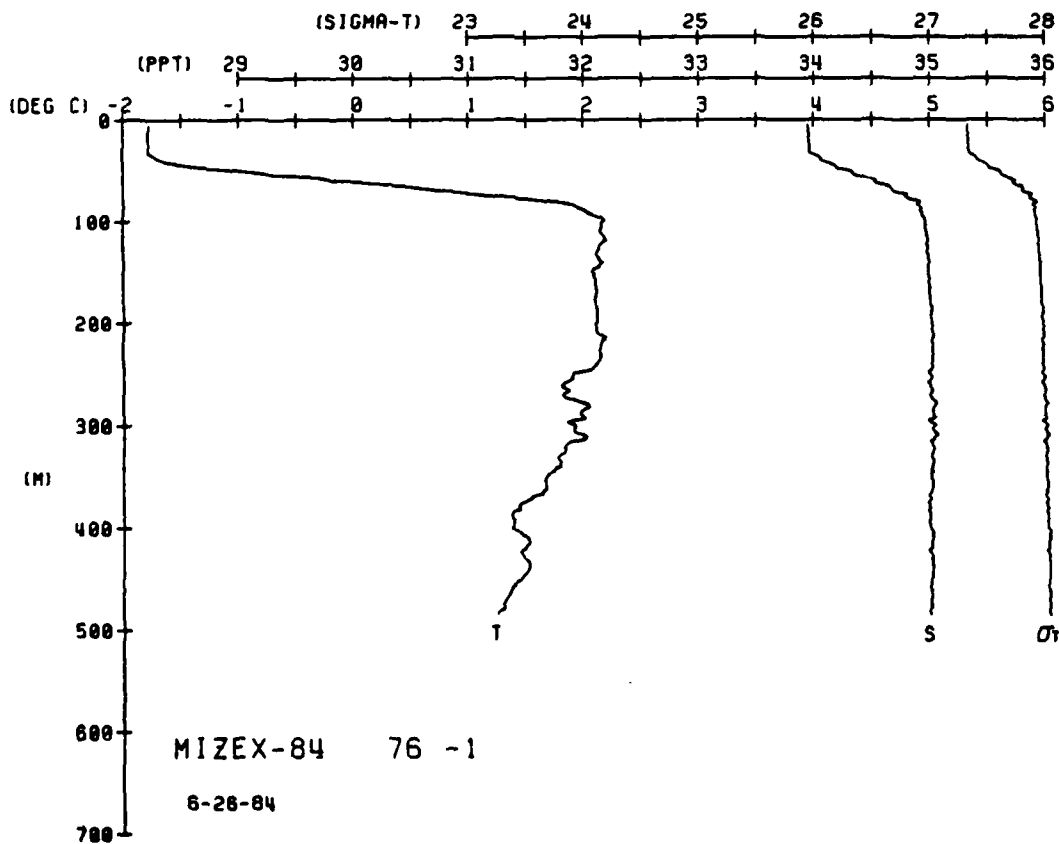
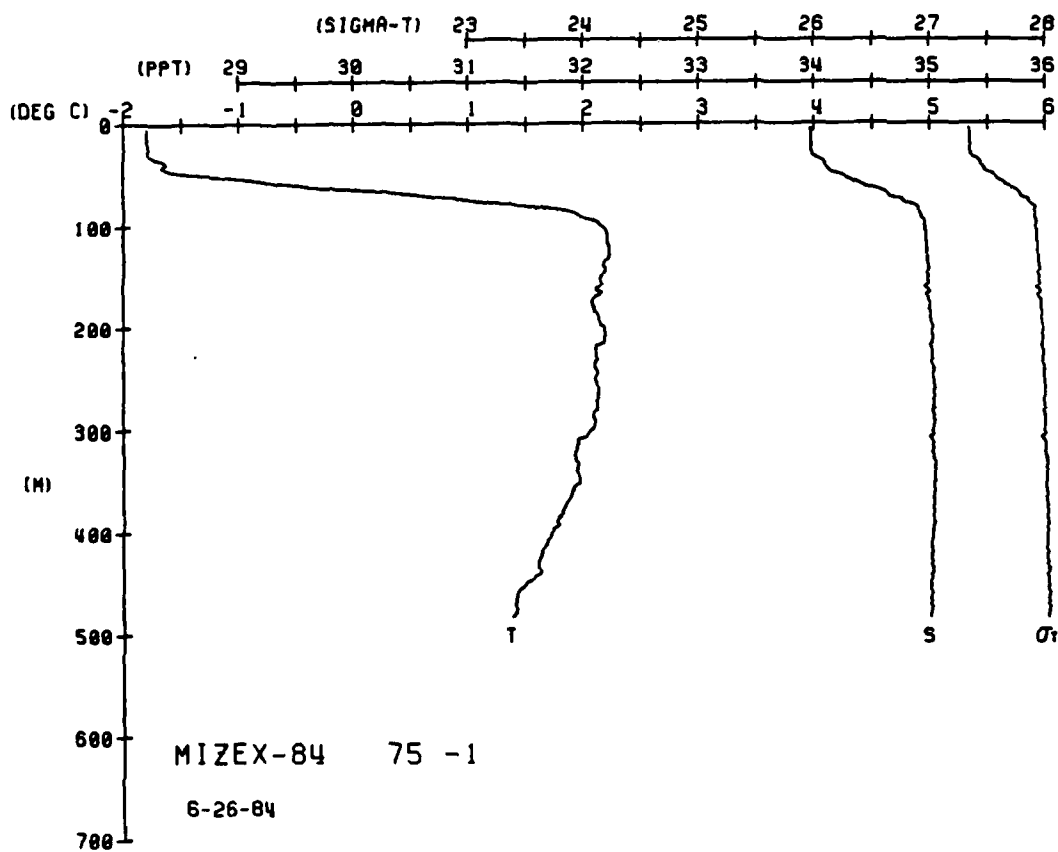
SALIN

TEMP

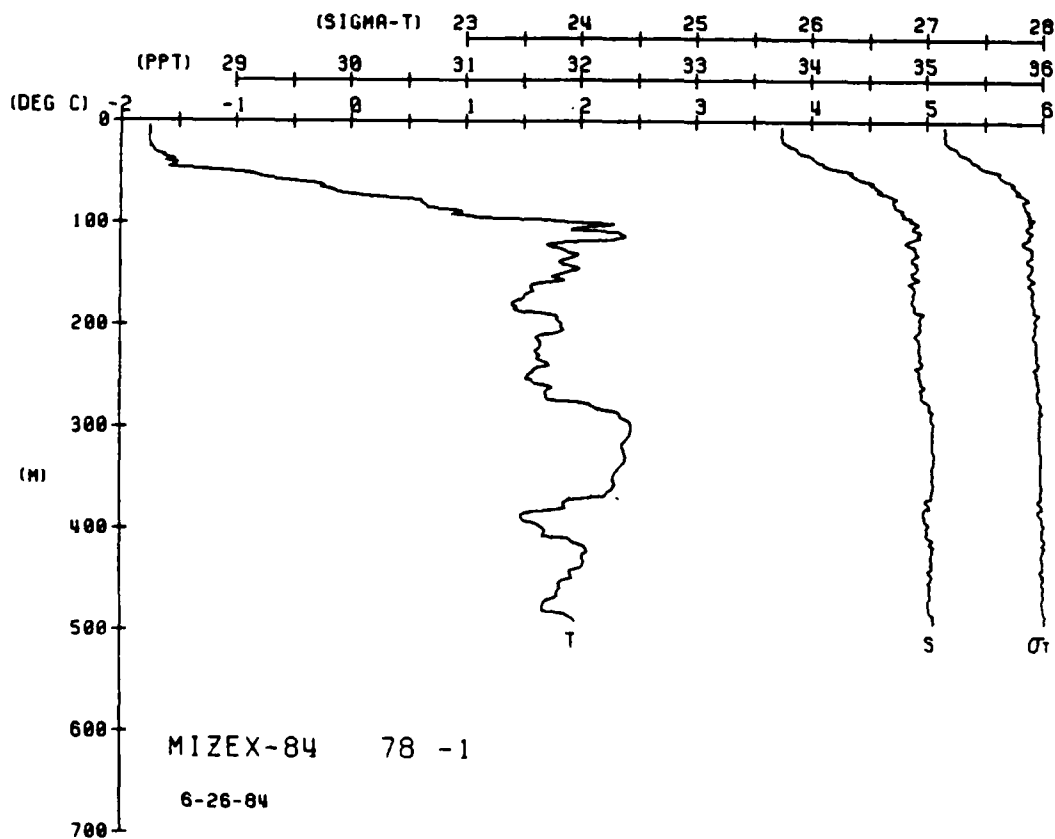
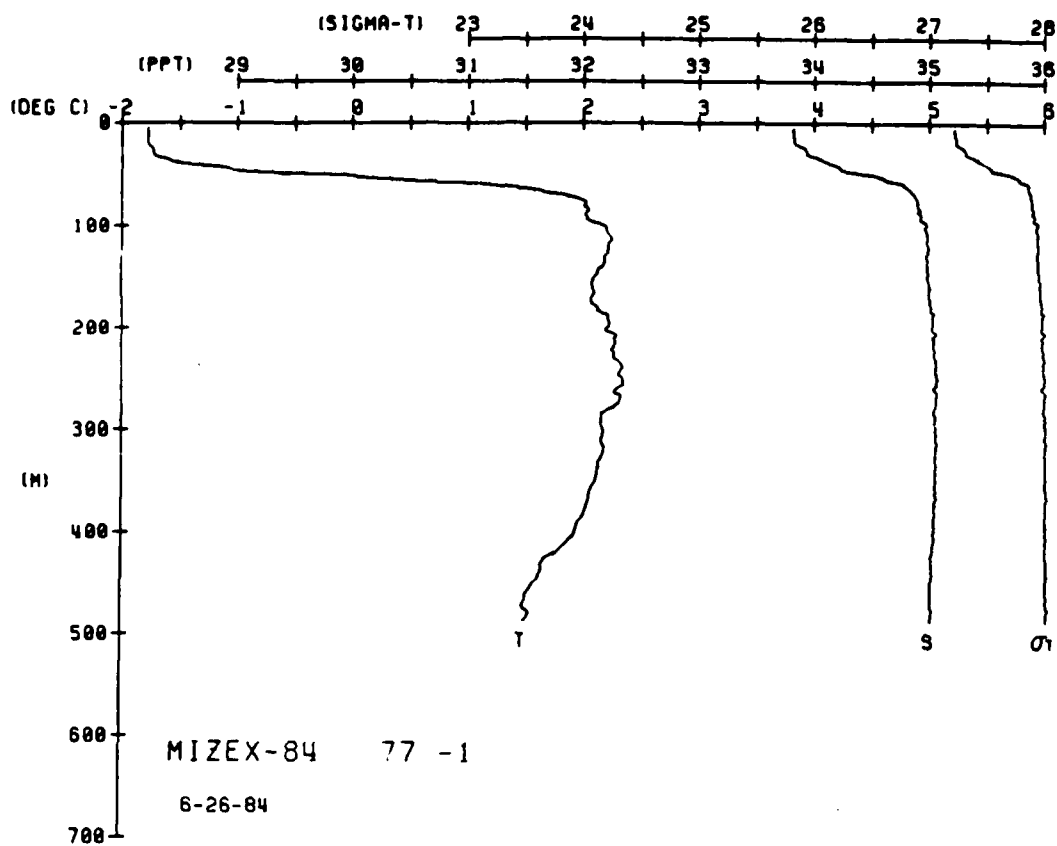
TEMP

DEPTH





MIXEX-04 STATION 77(1) CTD 26/JUN/1984 1704 GMT CODE = 1
 LAT = 80.9500 LNC = 2.5000 LTER = 400. LGR = 400.
 TIDE = 0.0000 TIDR = 0.0000 WIND = 0.0 SPEED = 0.0
 WAVE = 0.0000 WAVEH = 0.0000 WAVEP = 0.0000



```

WIXEX-04 STATION 79(1) CTD 26/JUN/1984 1849 GMT CODE = 1
LAT = 80.9000N LNG = 3.0833E LTR = 150. LGR = 150.
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

```

SOUND

SOUND

DYHNT

DYHNT

SPVUL

SPVUL

SIG T

SIG T

SALIN

SALIN

PTMAD

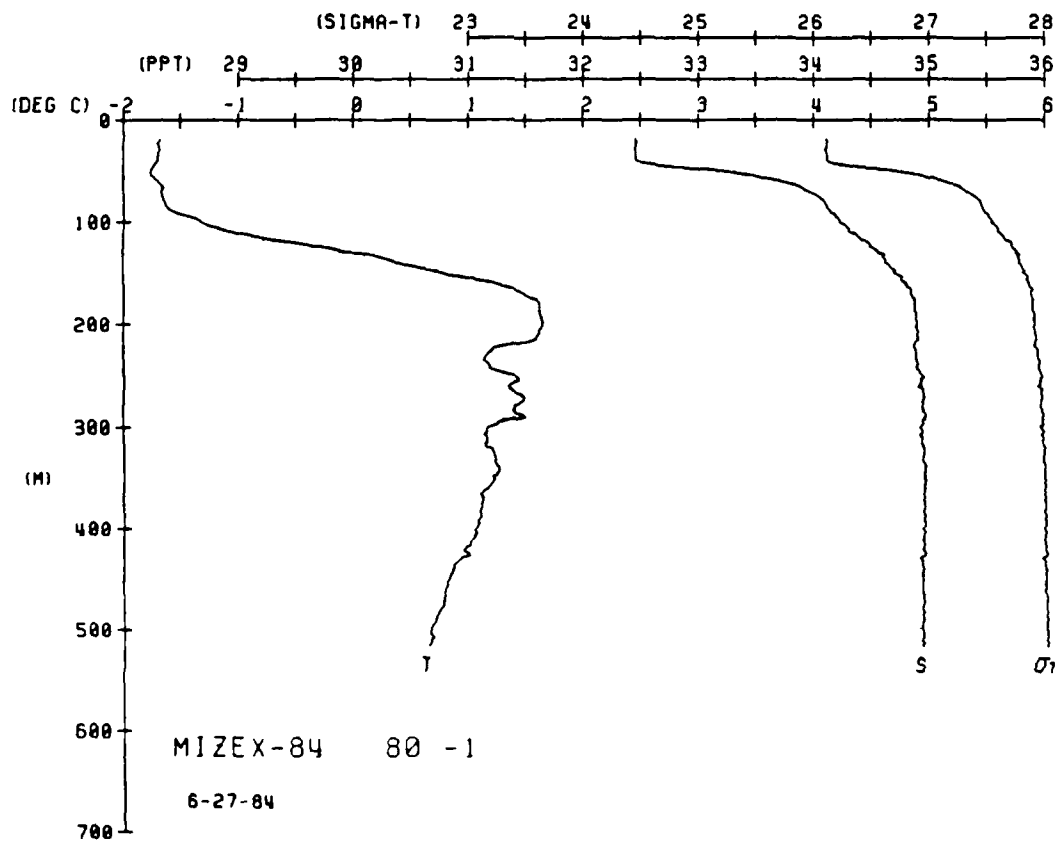
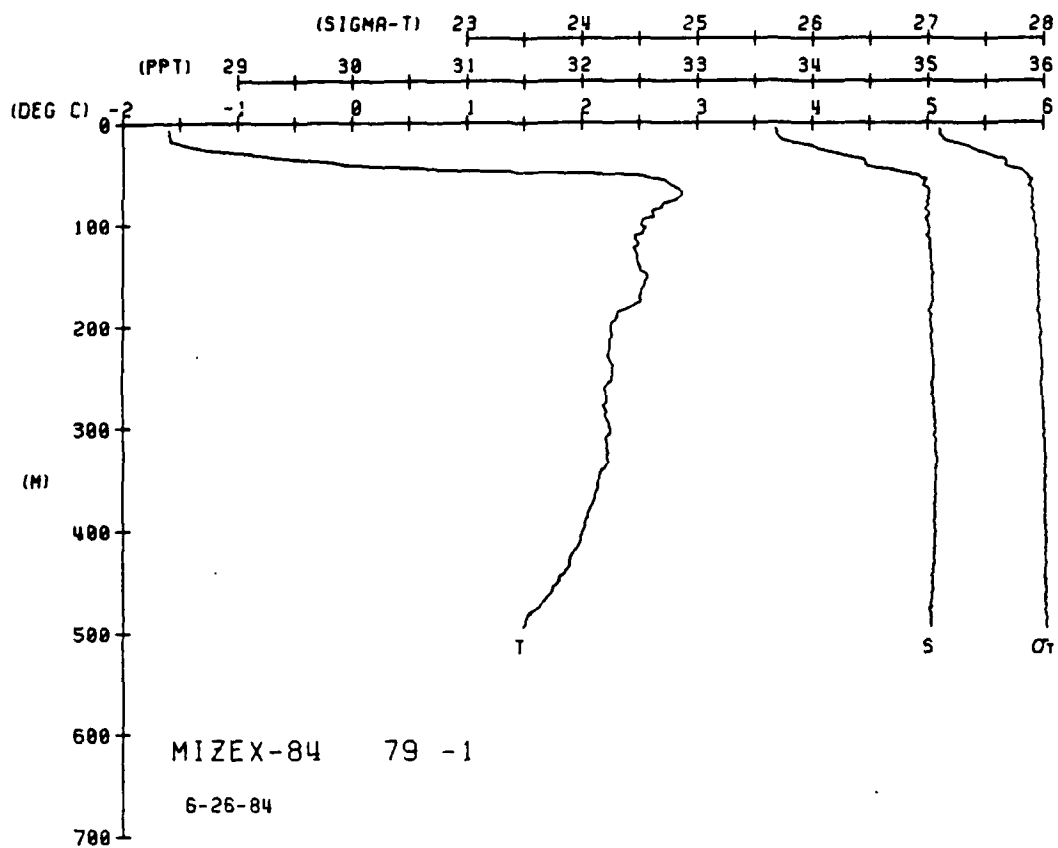
PTMAD

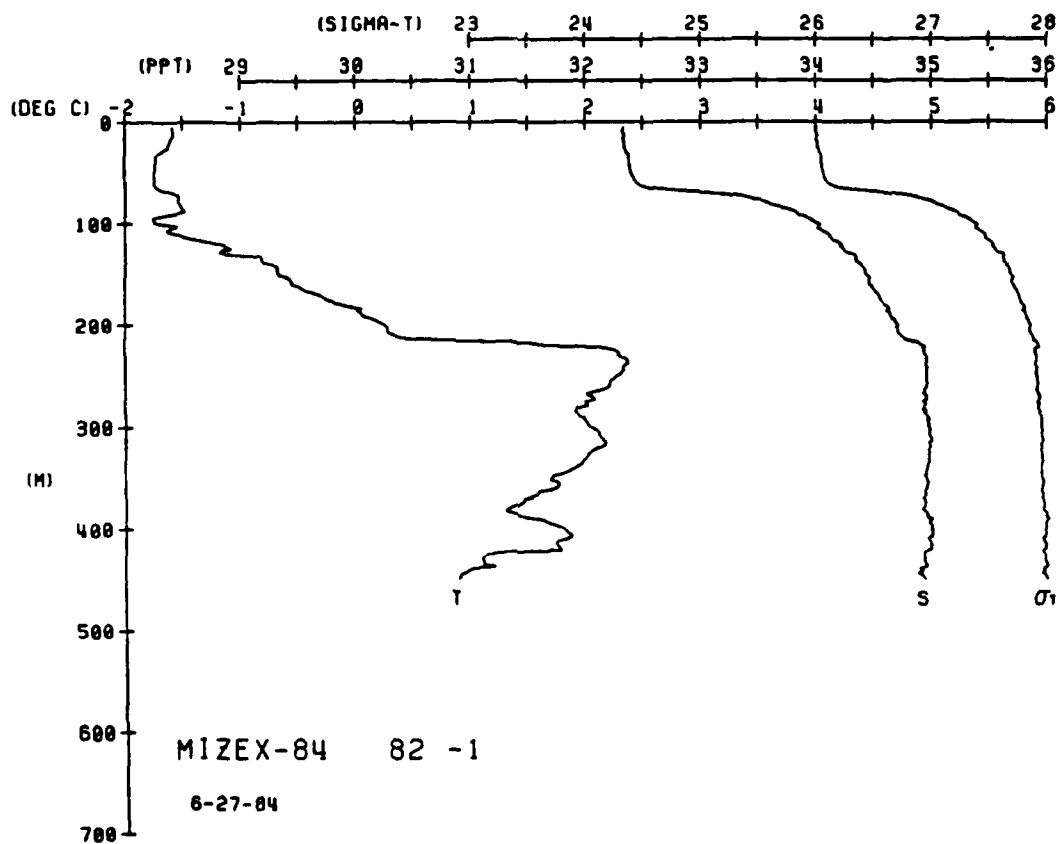
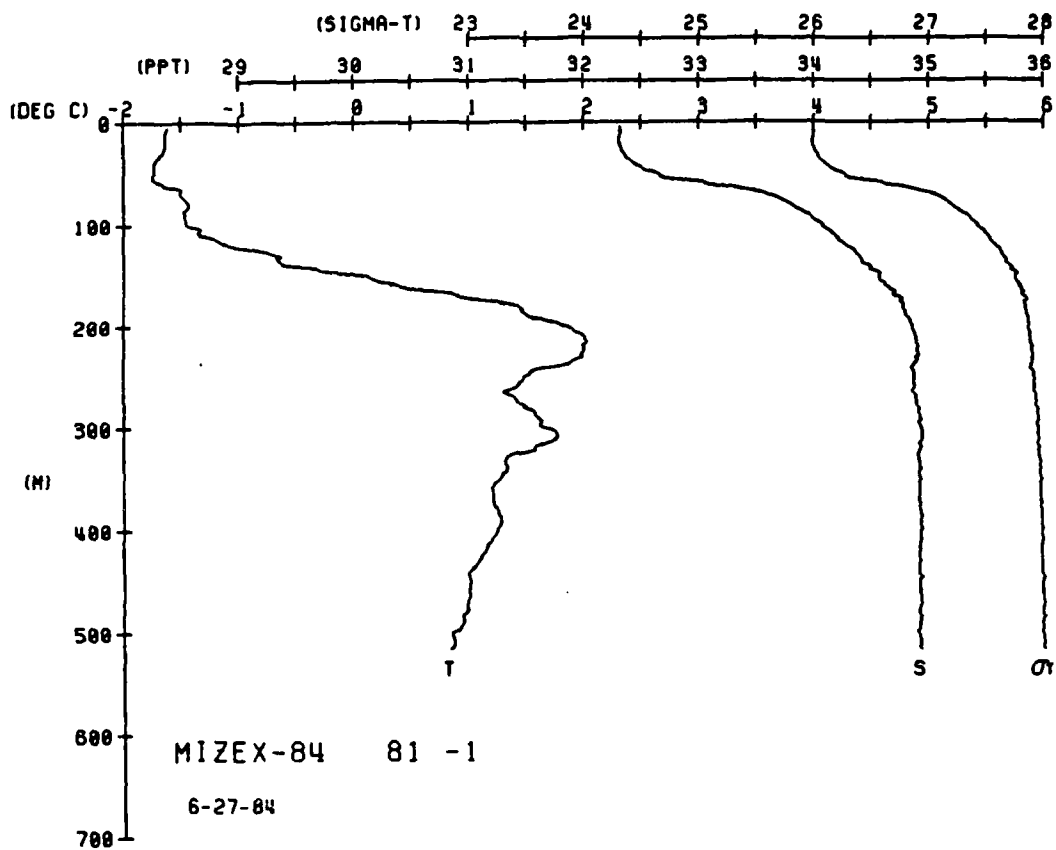
PTMAD

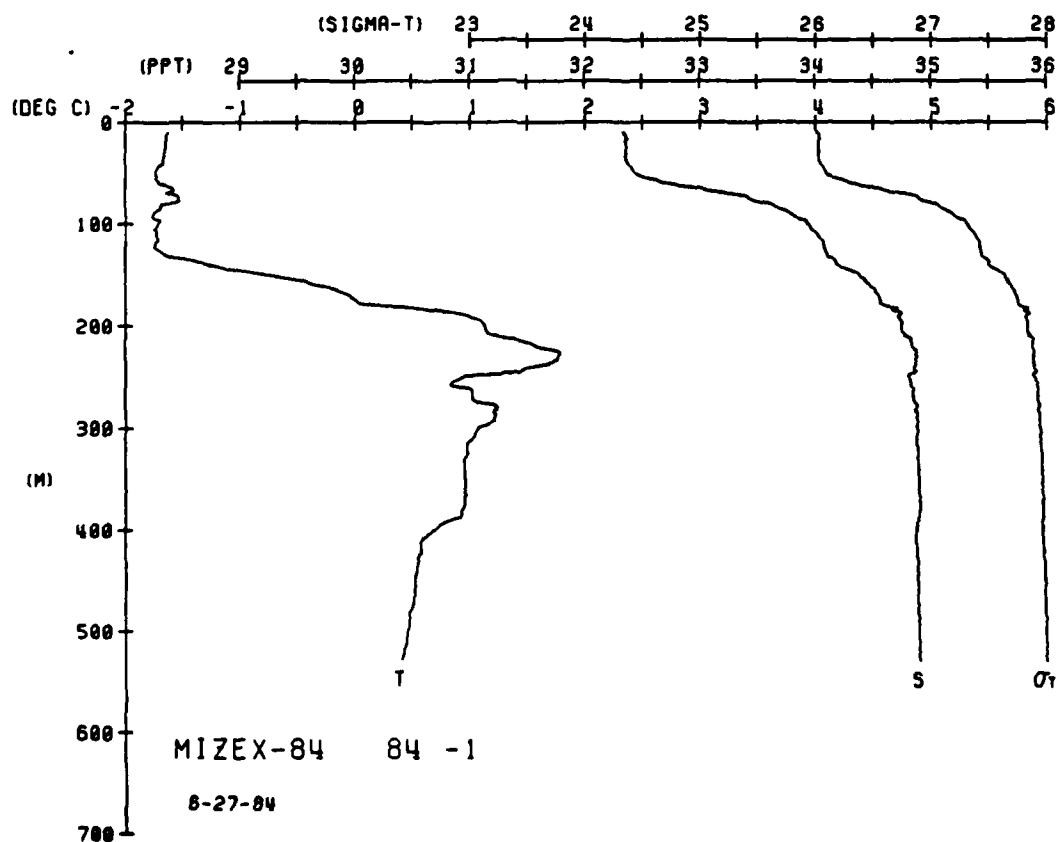
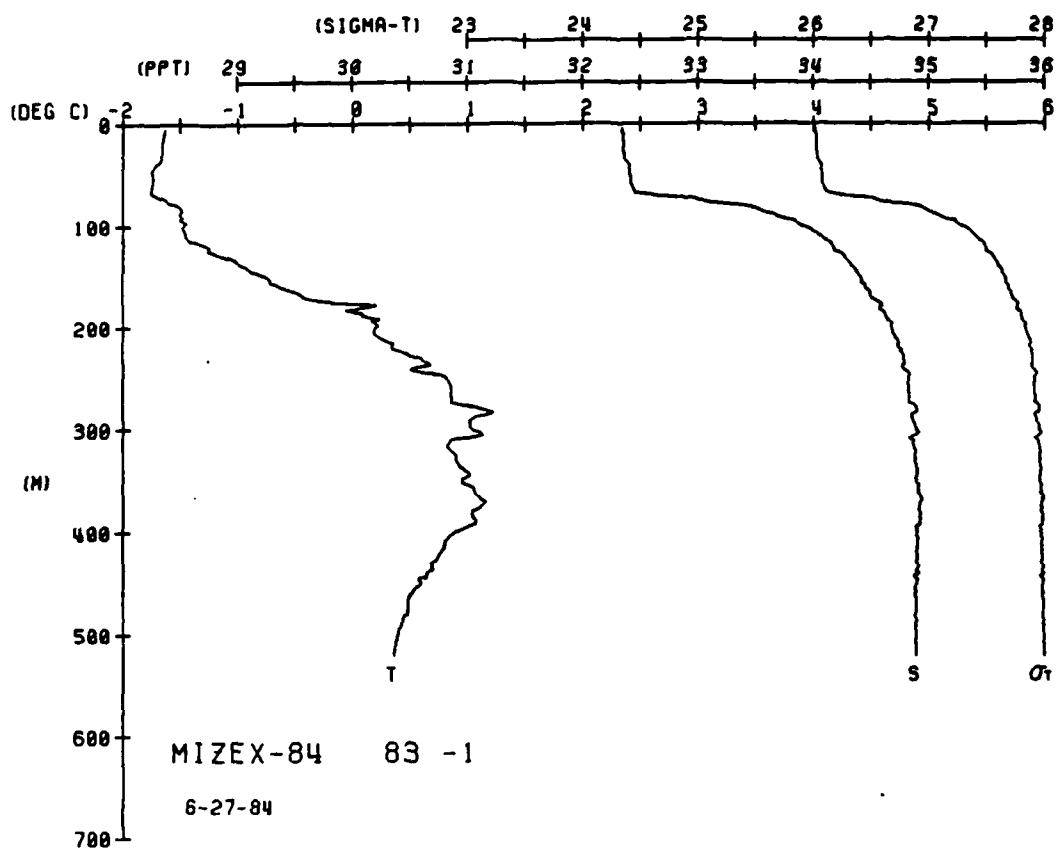
PTMAD

DEP

DEP







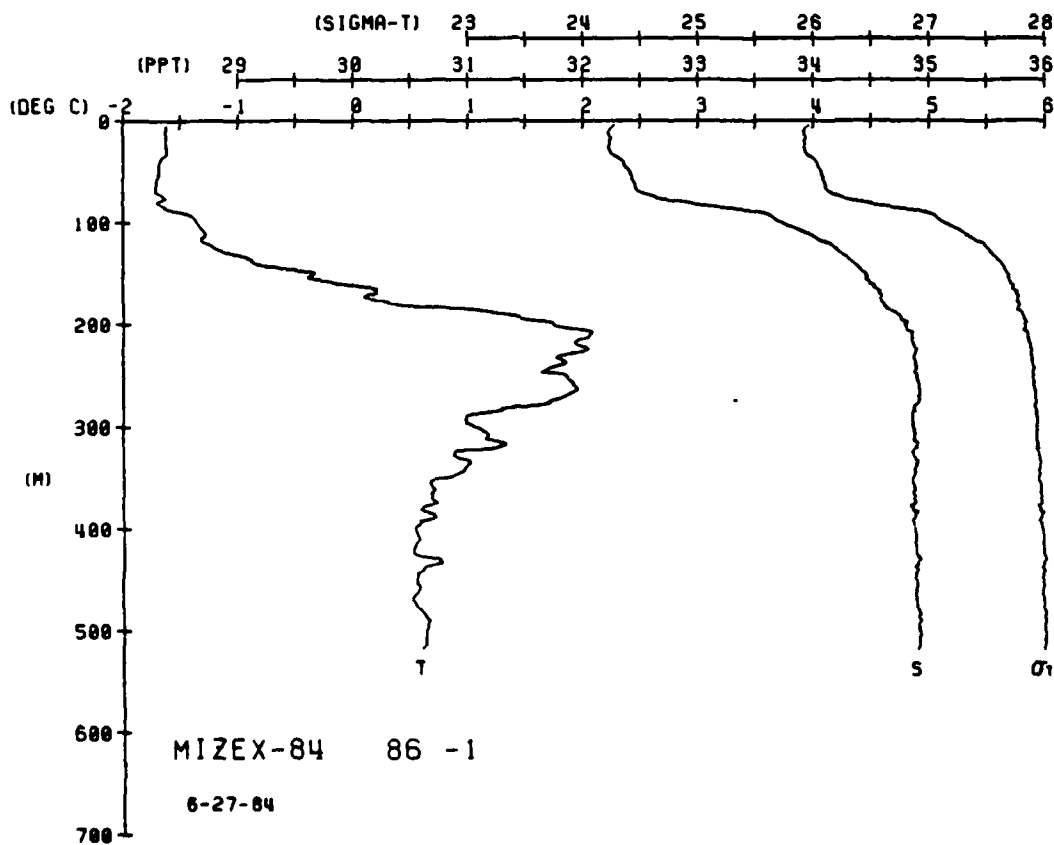
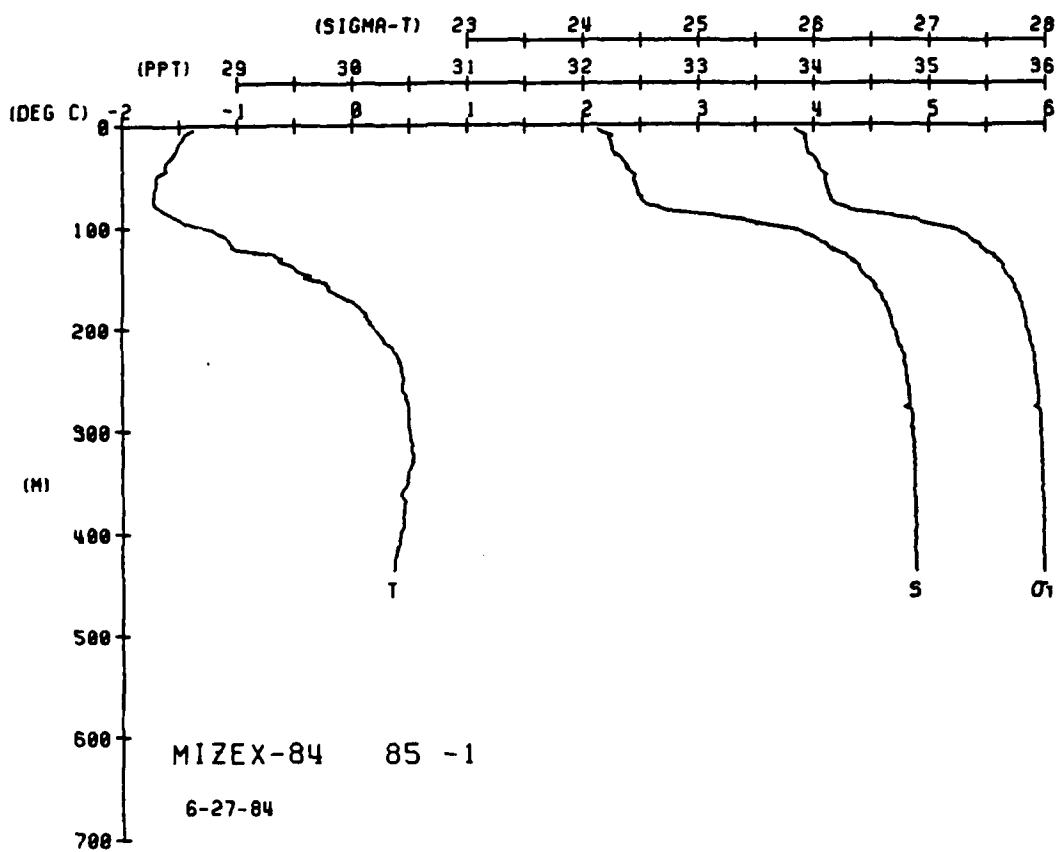

```

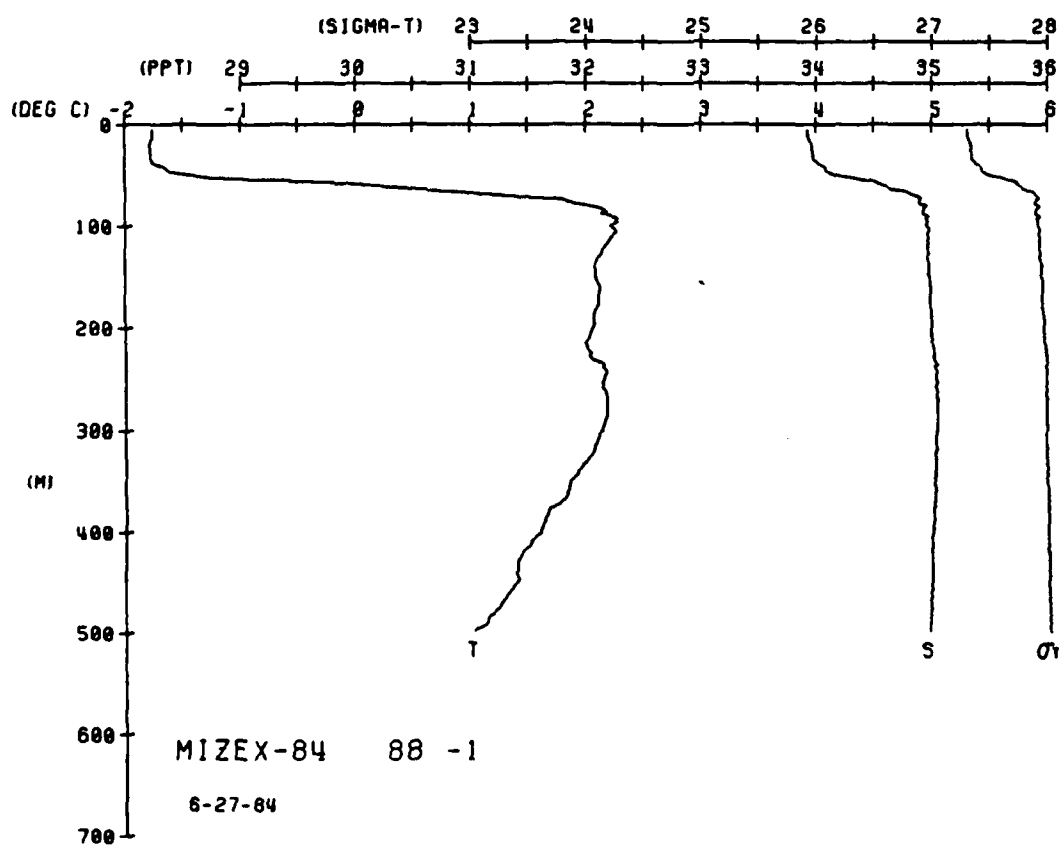
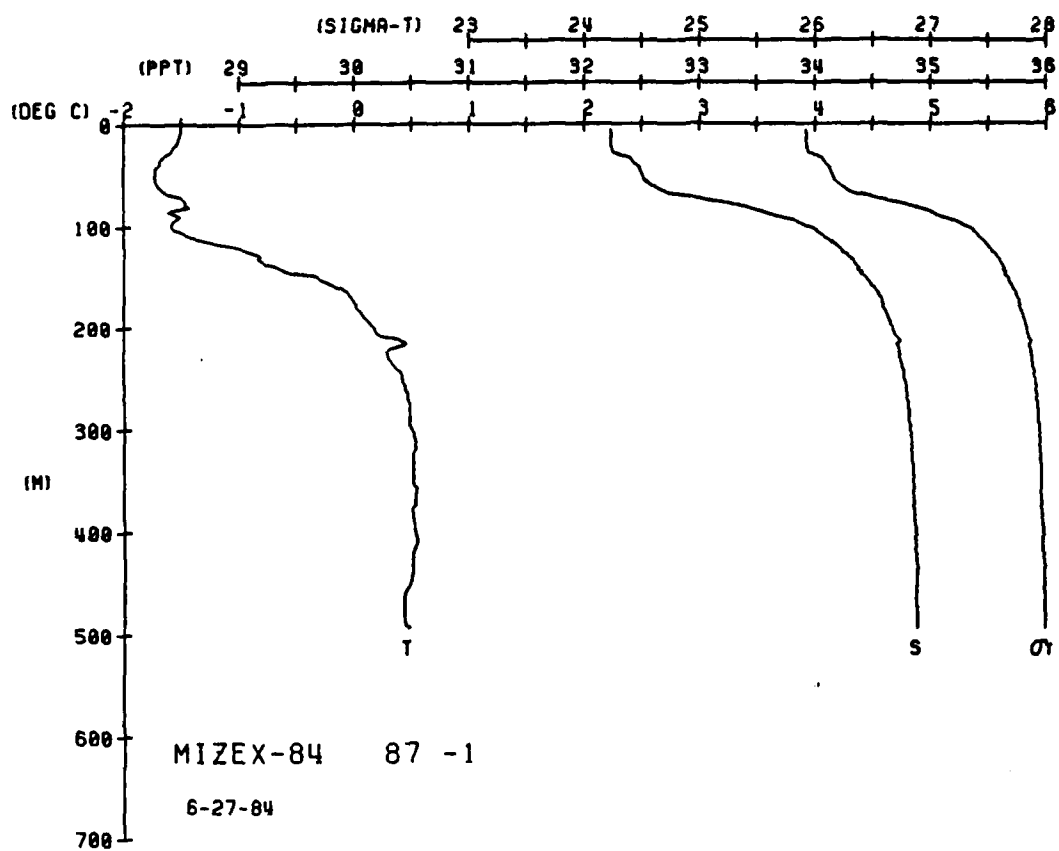
MIXER-84 STATION 86(1) CTD 27/JUN/1984 1433 GMT LUVZ = 1
LAT = 80.0767N LNG = 4.4817W LTER = 30V, LGEH = 300,
AIR TEMP = 0.0 BAHUM = 0.0 WIND = 0.0 SPEED = 0.0

```

[illegible]

The figure displays a 10x10 grid of small plots, each showing a different pattern of dots and lines. The patterns are arranged in a 10x10 grid, with each plot having a unique pattern of dots and lines. The patterns vary significantly, from simple horizontal lines to complex, dense clusters of dots and lines. The plots are arranged in a 10x10 grid, with each plot having a unique pattern of dots and lines. The patterns vary significantly, from simple horizontal lines to complex, dense clusters of dots and lines.



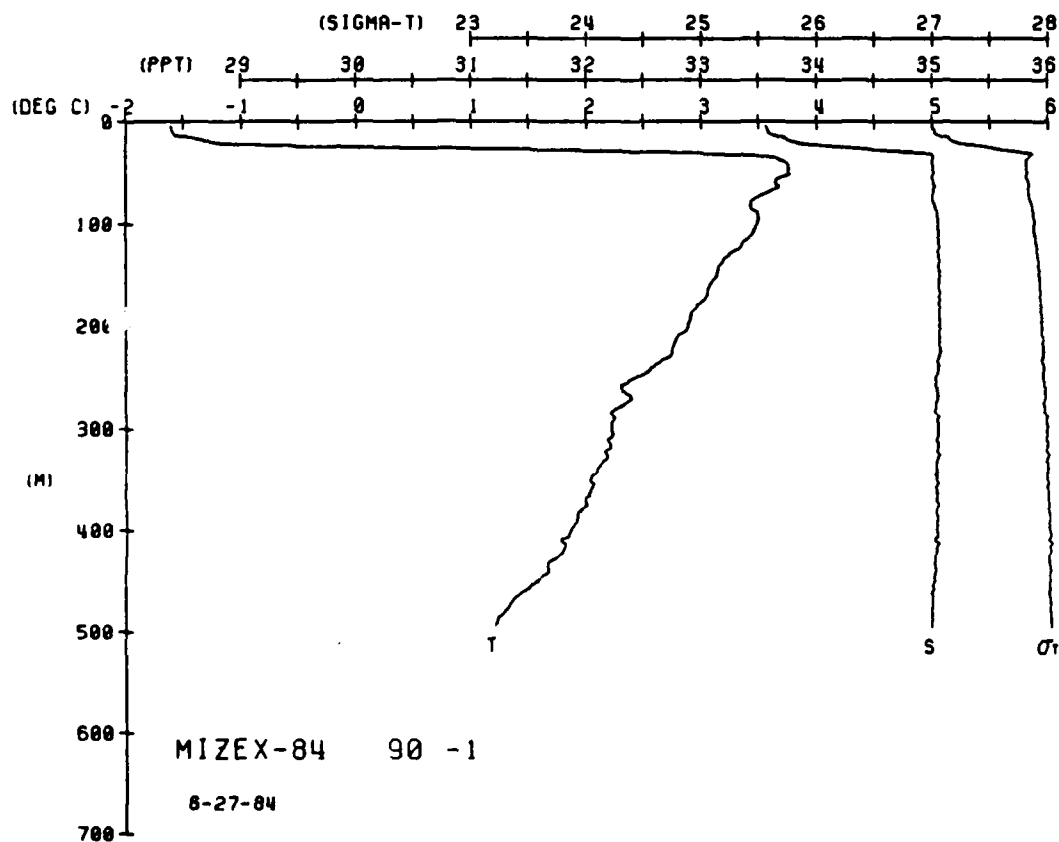
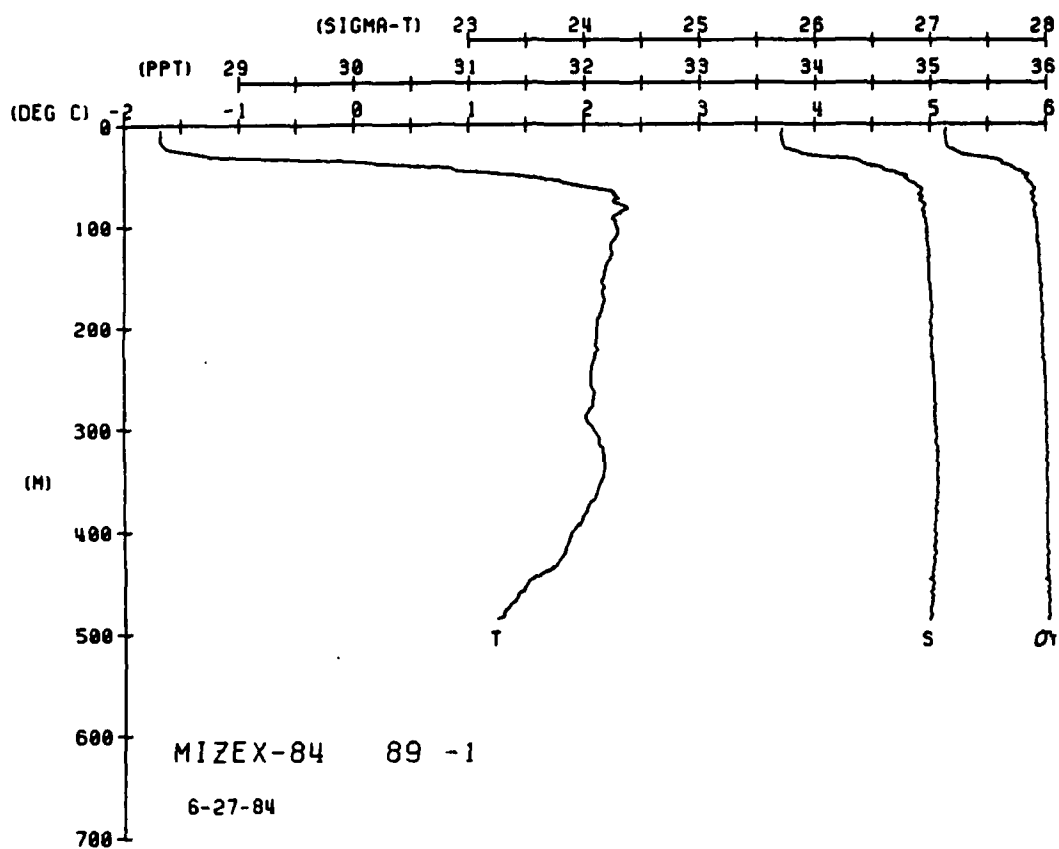


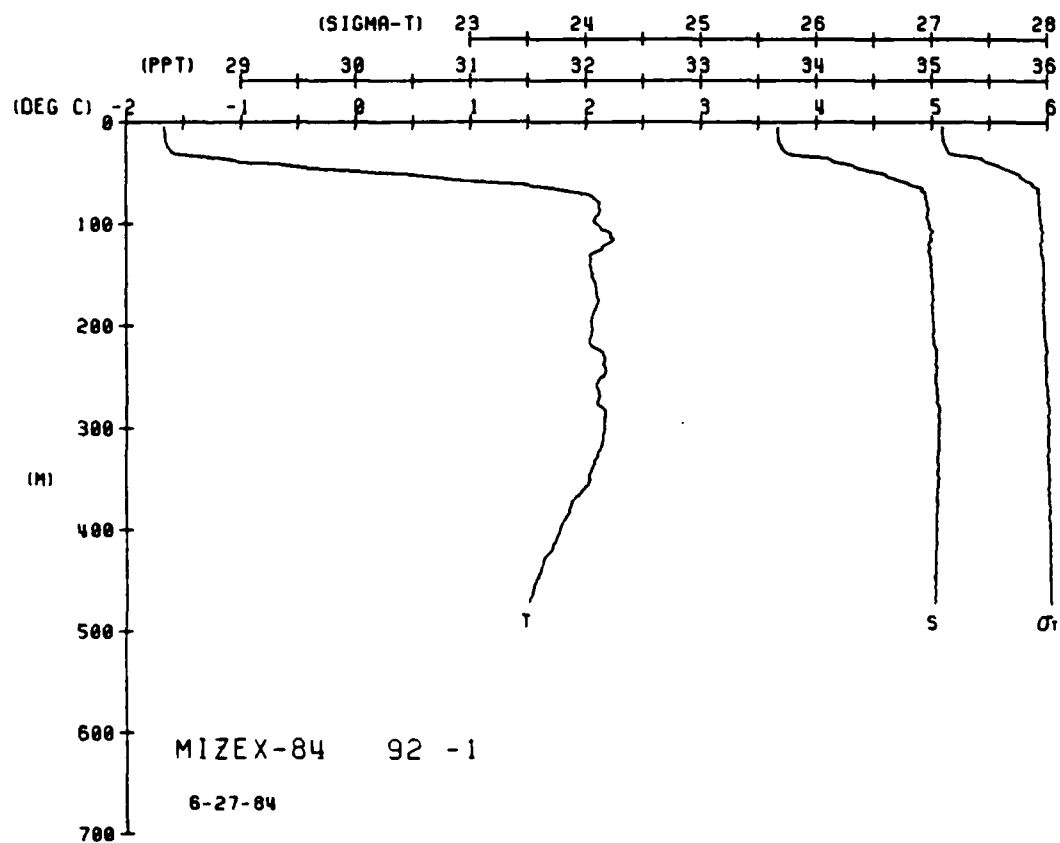
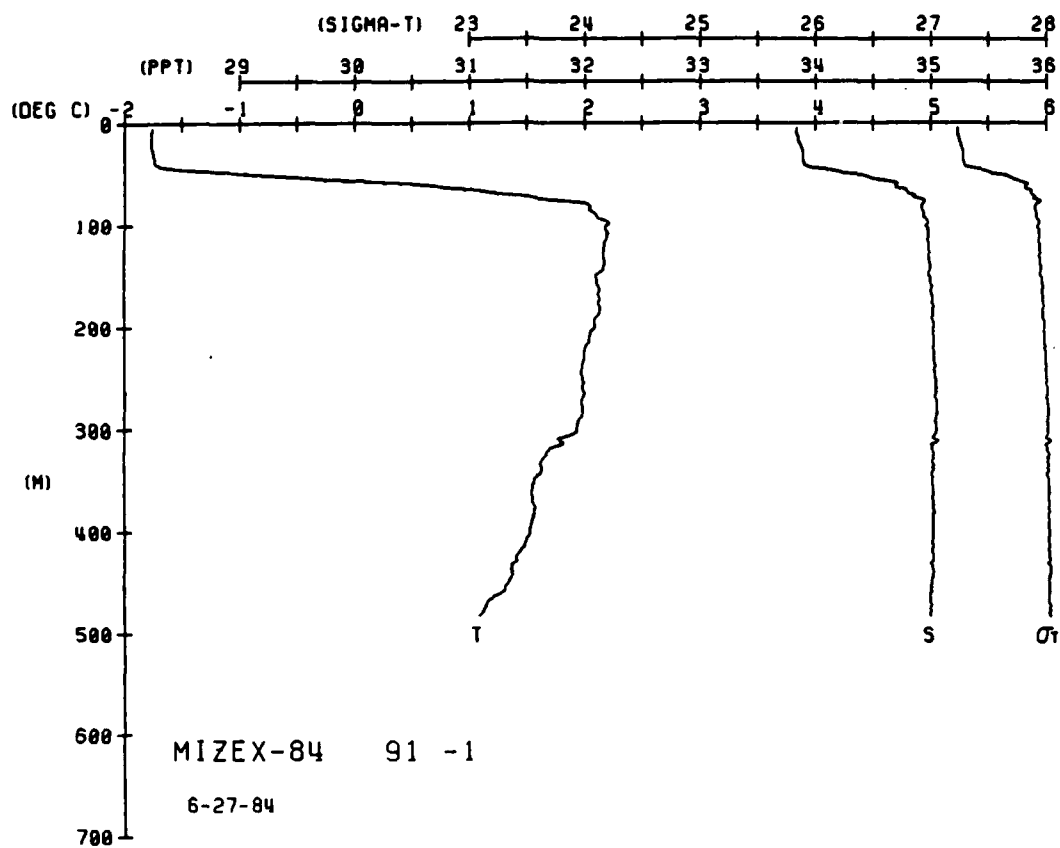
```

WIXEX-04 STATION 09(1) CTD 27/JUN/1984 1625 GMT CODE = 1
LAT = 81.05000 LNG = 4.03333 E LTER = 150. LGLR = 150.
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

```

[illegible]

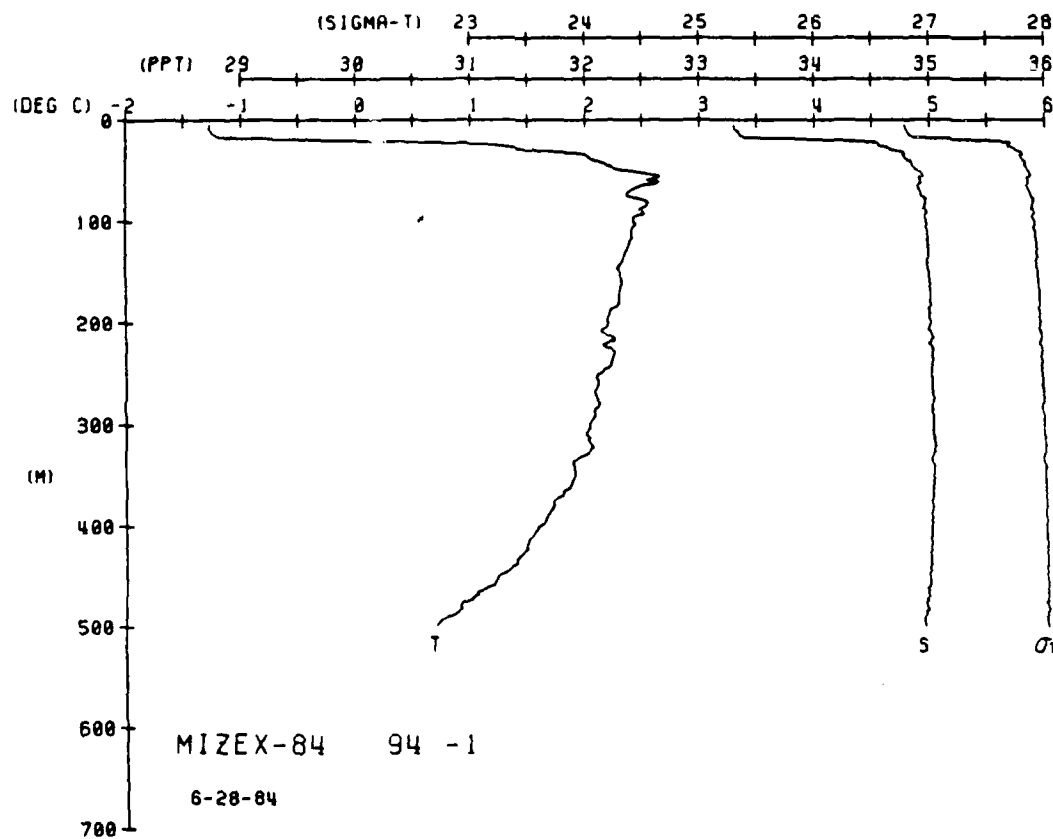
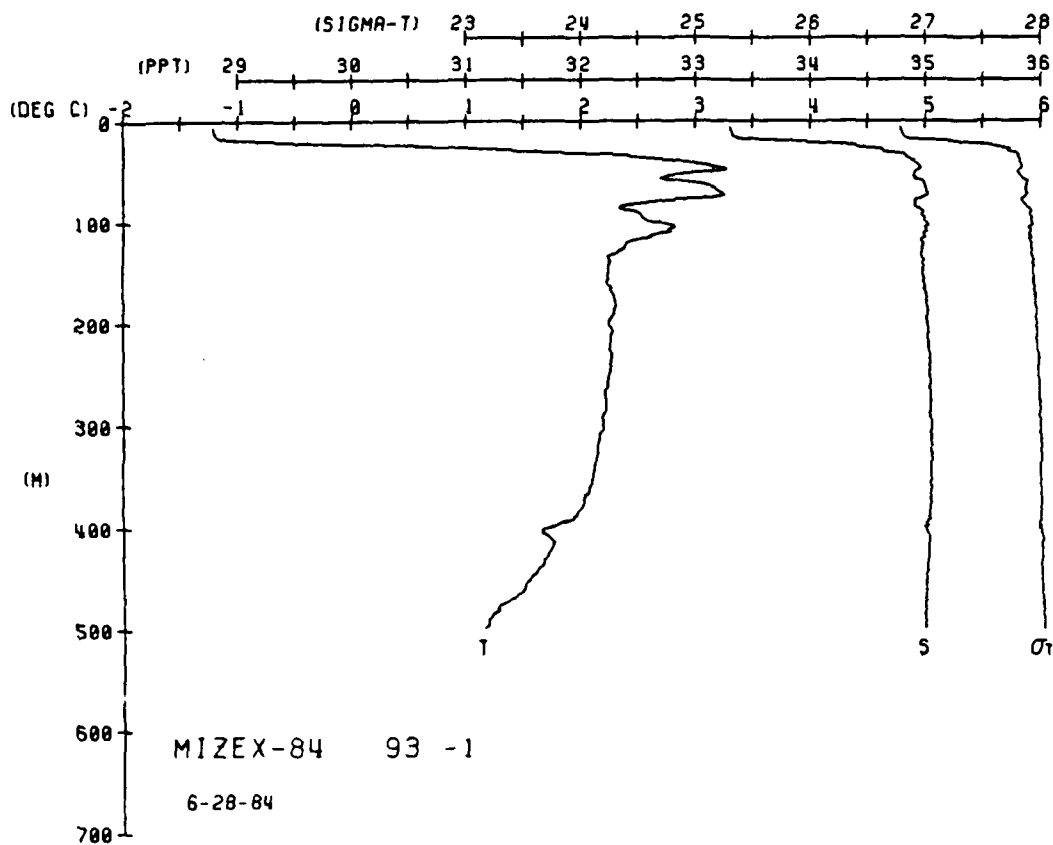


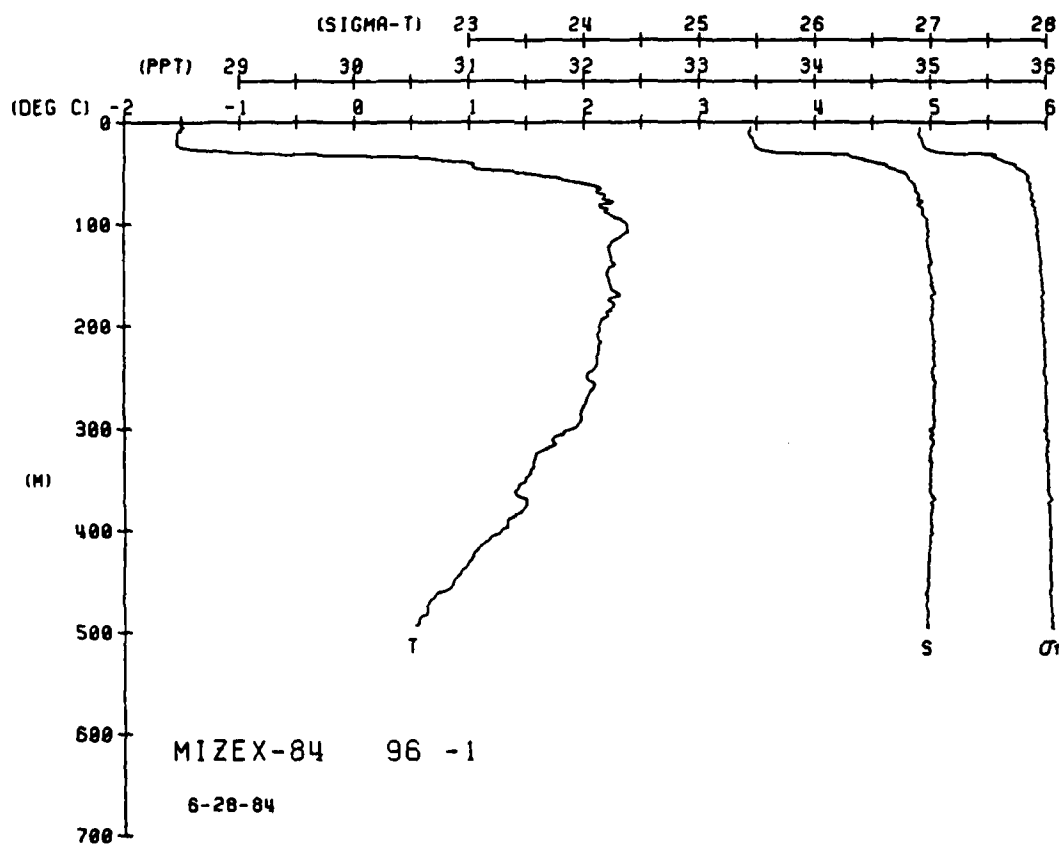
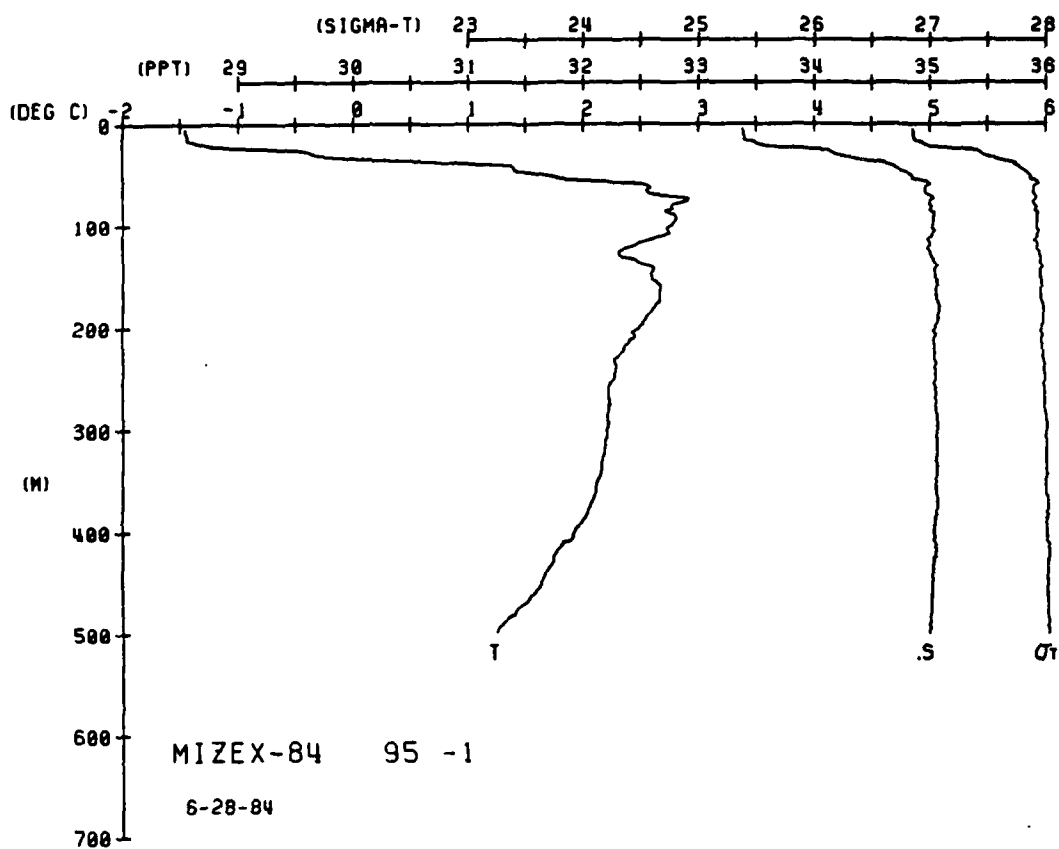



```

NITEX-04 STATION 93(1) CTD 28/JUN/1984 1109 GMT CODE = 1
LAT = 00.5500N LMG = 4.7500E LTER = 150 LGR = 150
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

```



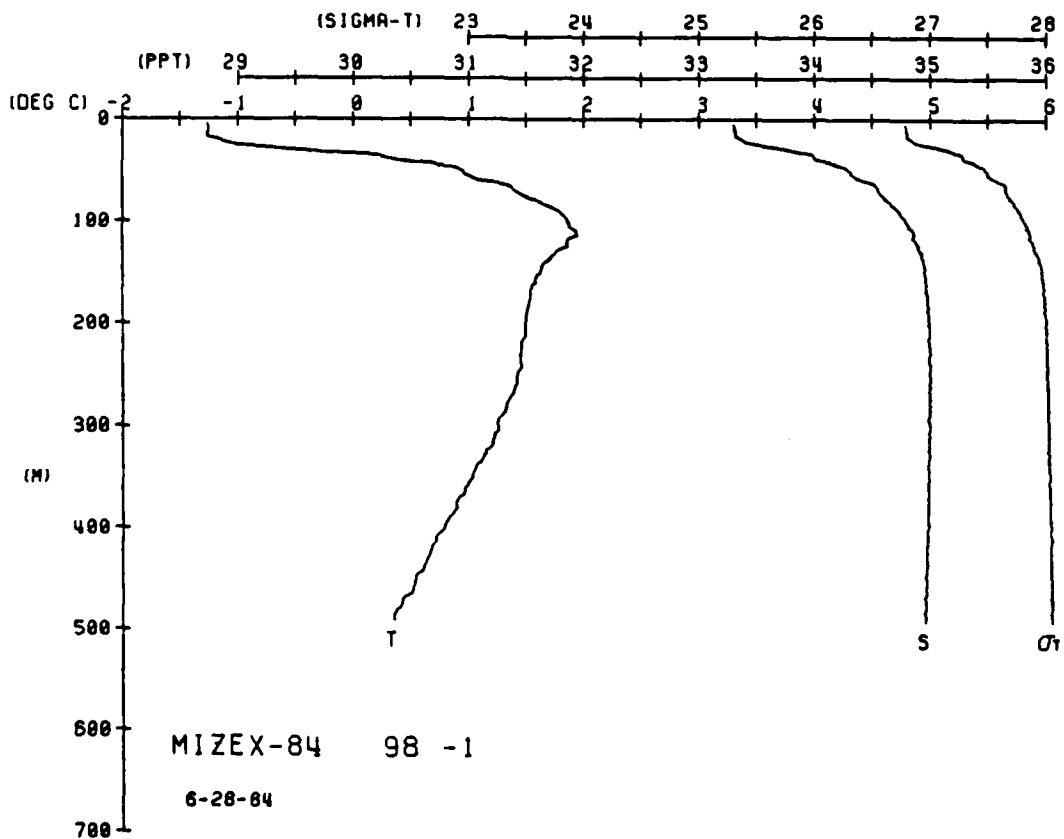
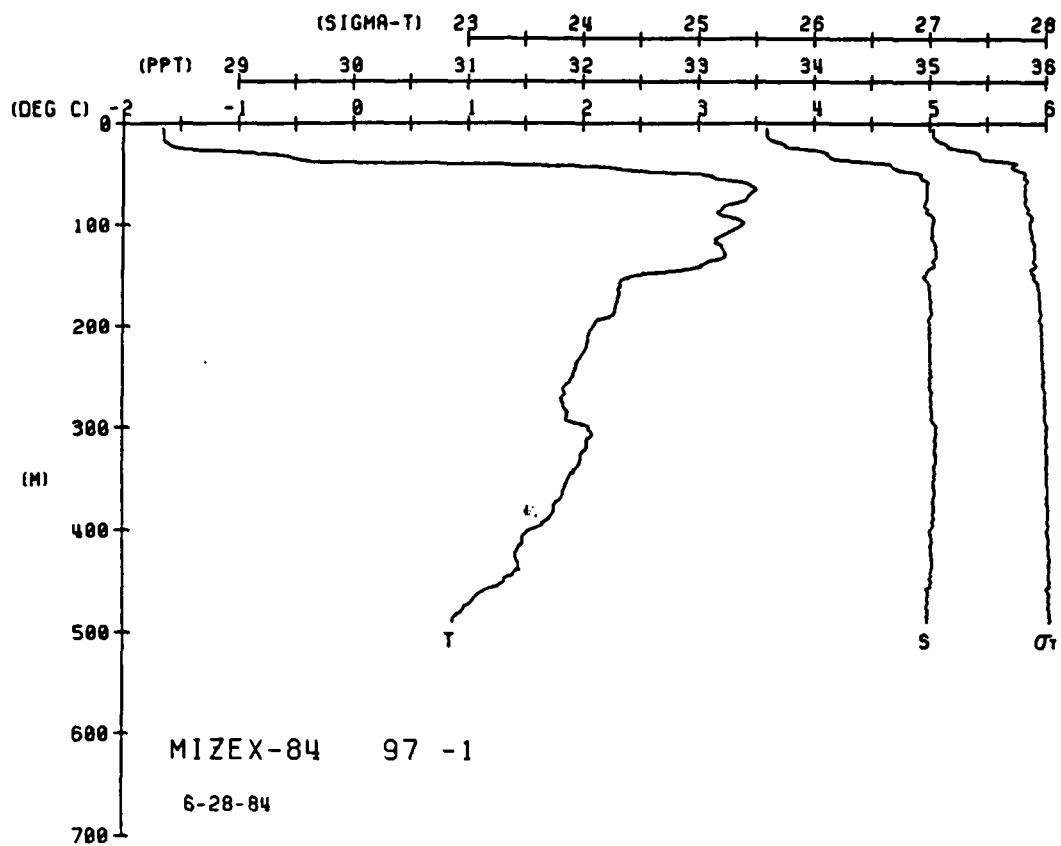


MIXEX-84 STATION 9W(1) CTU 2R/JUN/1984 160/ GMT CUDE = 1
LAT = 80.7667N LNG = 5.0R33E LTER = 150; LGEN = 150;
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

DEPTH	TEMP	PTMP	SALIN	SIG T	SPVOL	DYNHT	SOUND
10	10.0	10.0	35.0	1.020	1.0	1.0	1.0
20	10.0	10.0	35.0	1.020	1.0	1.0	1.0
30	10.0	10.0	35.0	1.020	1.0	1.0	1.0
40	10.0	10.0	35.0	1.020	1.0	1.0	1.0
50	10.0	10.0	35.0	1.020	1.0	1.0	1.0
60	10.0	10.0	35.0	1.020	1.0	1.0	1.0
70	10.0	10.0	35.0	1.020	1.0	1.0	1.0
80	10.0	10.0	35.0	1.020	1.0	1.0	1.0
90	10.0	10.0	35.0	1.020	1.0	1.0	1.0
100	10.0	10.0	35.0	1.020	1.0	1.0	1.0
110	10.0	10.0	35.0	1.020	1.0	1.0	1.0
120	10.0	10.0	35.0	1.020	1.0	1.0	1.0
130	10.0	10.0	35.0	1.020	1.0	1.0	1.0
140	10.0	10.0	35.0	1.020	1.0	1.0	1.0
150	10.0	10.0	35.0	1.020	1.0	1.0	1.0
160	10.0	10.0	35.0	1.020	1.0	1.0	1.0
170	10.0	10.0	35.0	1.020	1.0	1.0	1.0
180	10.0	10.0	35.0	1.020	1.0	1.0	1.0
190	10.0	10.0	35.0	1.020	1.0	1.0	1.0
200	10.0	10.0	35.0	1.020	1.0	1.0	1.0
210	10.0	10.0	35.0	1.020	1.0	1.0	1.0
220	10.0	10.0	35.0	1.020	1.0	1.0	1.0
230	10.0	10.0	35.0	1.020	1.0	1.0	1.0
240	10.0	10.0	35.0	1.020	1.0	1.0	1.0
250	10.0	10.0	35.0	1.020	1.0	1.0	1.0
260	10.0	10.0	35.0	1.020	1.0	1.0	1.0
270	10.0	10.0	35.0	1.020	1.0	1.0	1.0
280	10.0	10.0	35.0	1.020	1.0	1.0	1.0
290	10.0	10.0	35.0	1.020	1.0	1.0	1.0
300	10.0	10.0	35.0	1.020	1.0	1.0	1.0
310	10.0	10.0	35.0	1.020	1.0	1.0	1.0
320	10.0	10.0	35.0	1.020	1.0	1.0	1.0
330	10.0	10.0	35.0	1.020	1.0	1.0	1.0
340	10.0	10.0	35.0	1.020	1.0	1.0	1.0
350	10.0	10.0	35.0	1.020	1.0	1.0	1.0
360	10.0	10.0	35.0	1.020	1.0	1.0	1.0
370	10.0	10.0	35.0	1.020	1.0	1.0	1.0
380	10.0	10.0	35.0	1.020	1.0	1.0	1.0
390	10.0	10.0	35.0	1.020	1.0	1.0	1.0
400	10.0	10.0	35.0	1.020	1.0	1.0	1.0
410	10.0	10.0	35.0	1.020	1.0	1.0	1.0
420	10.0	10.0	35.0	1.020	1.0	1.0	1.0
430	10.0	10.0	35.0	1.020	1.0	1.0	1.0
440	10.0	10.0	35.0	1.020	1.0	1.0	1.0
450	10.0	10.0	35.0	1.020	1.0	1.0	1.0
460	10.0	10.0	35.0	1.020	1.0	1.0	1.0
470	10.0	10.0	35.0	1.020	1.0	1.0	1.0
480	10.0	10.0	35.0	1.020	1.0	1.0	

DEPTH TEMP PTMP SALIN SIC T SPVUL DYNHT SOUND

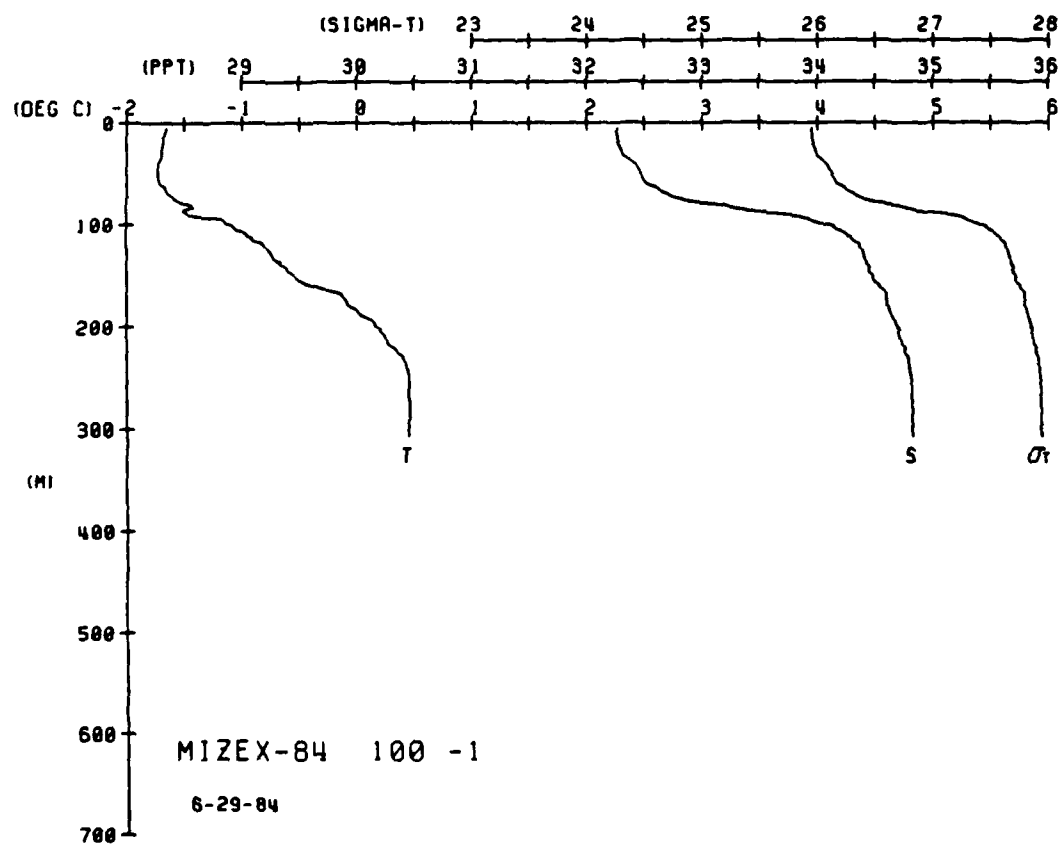
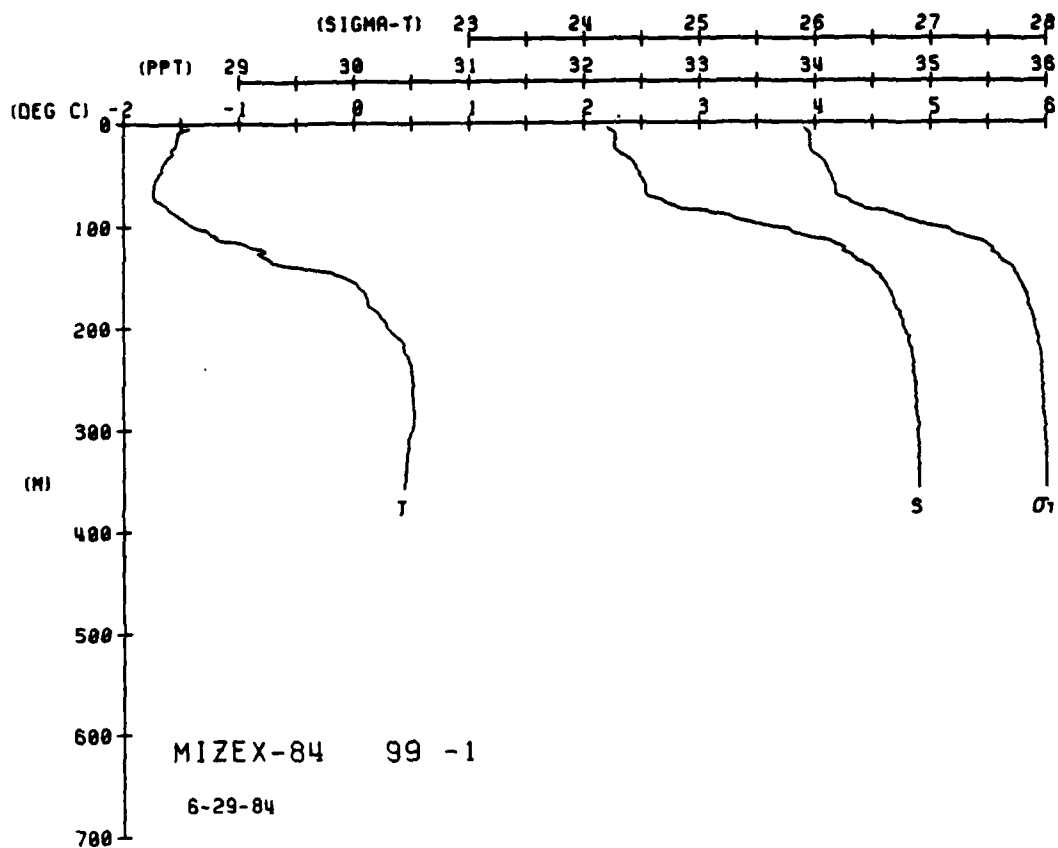
[illegible][illegible]



```

MIXEX-04 STATION 99(1) CTD 29/JUN/1984 927 GMT CODE = 1
WINDLAY = 00.2467N LNC = 5.9950W LTER = 300. LGER = 300.
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

```



WIZEX-84 STATION 102(1) CTD 29/JUN/1984 1149 GMT LUWL = 1
LAT = 80.7533N LNG = 6.0033W LTER = 300 LGEN = 300
AIR TEMP = 0.0 BAHOM = 0.0 WIND = 0.0 SPEED = 0.0

SOUND
SOUND

DIMMI
DIMMI

SPVOL
SPVOL

SIG T
SIG T

SALIN
SALIN

PTEMP
PTEMP

TEMP
TEMP

DEPTH
DEPTH

SOUND
SOUND

DIMMI
DIMMI

SPVOL
SPVOL

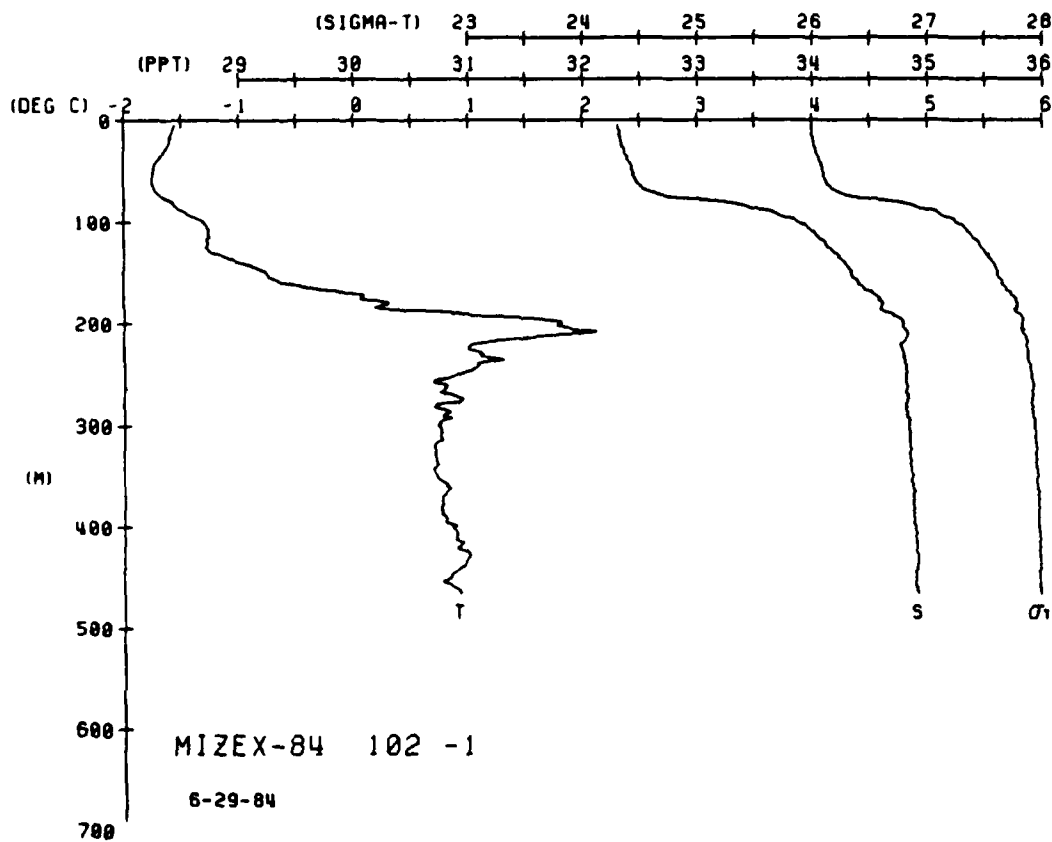
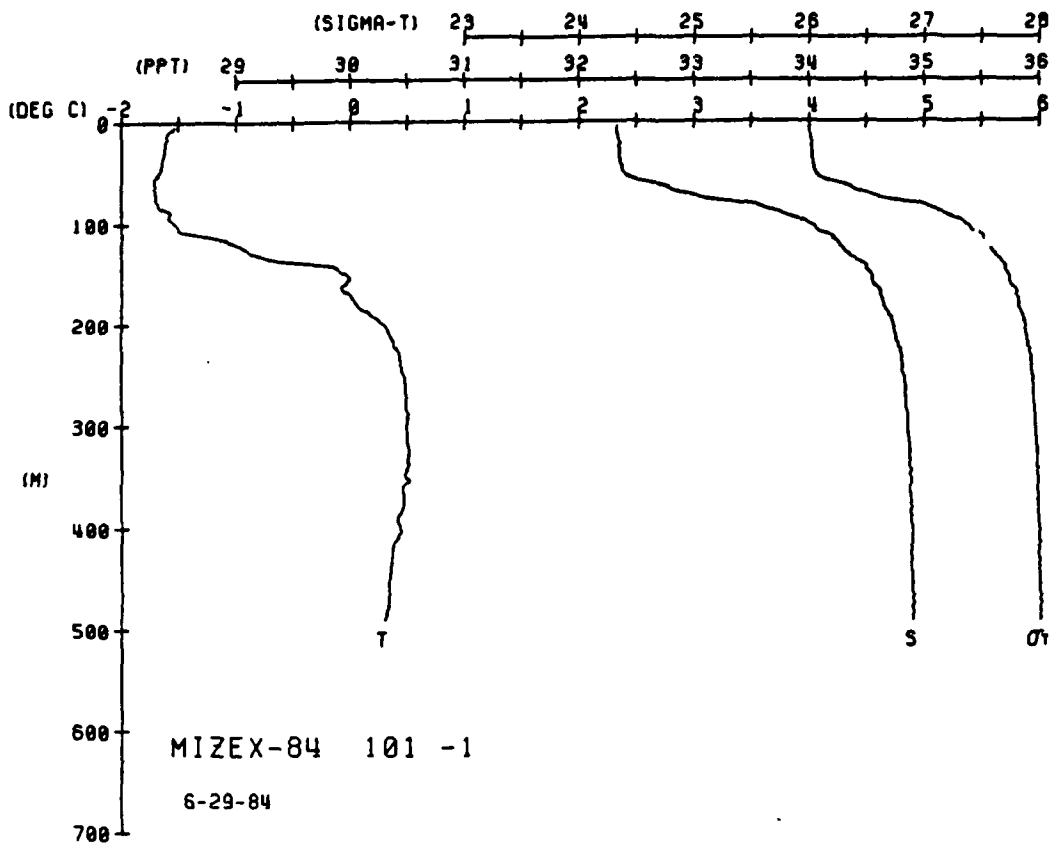
SIG T
SIG T

SALIN
SALIN

PTEMP
PTEMP

TEMP
TEMP

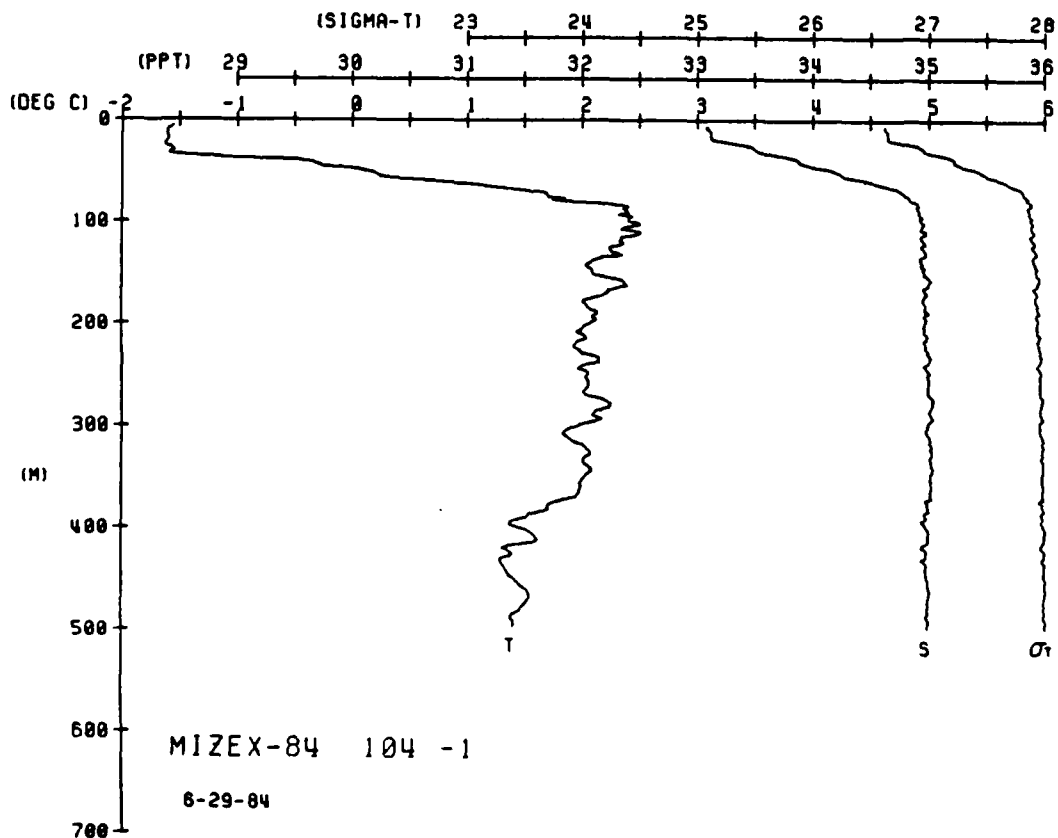
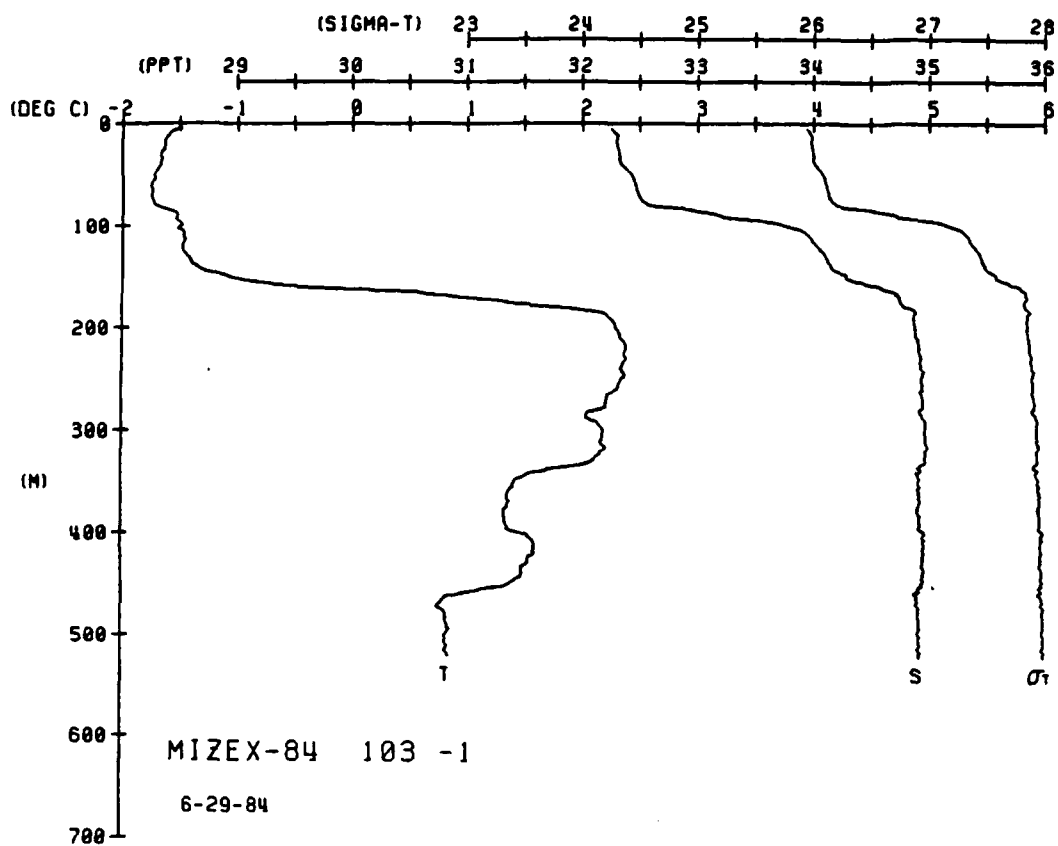
DEPTH
DEPTH



```

NINE-84 STATION 103(1) CTD 29/JUN/1984 1242 GMT CODE = 1
LAT = 30.9233N LNC = 6.0017W LTER = 300. LGER = 300.
WIND TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

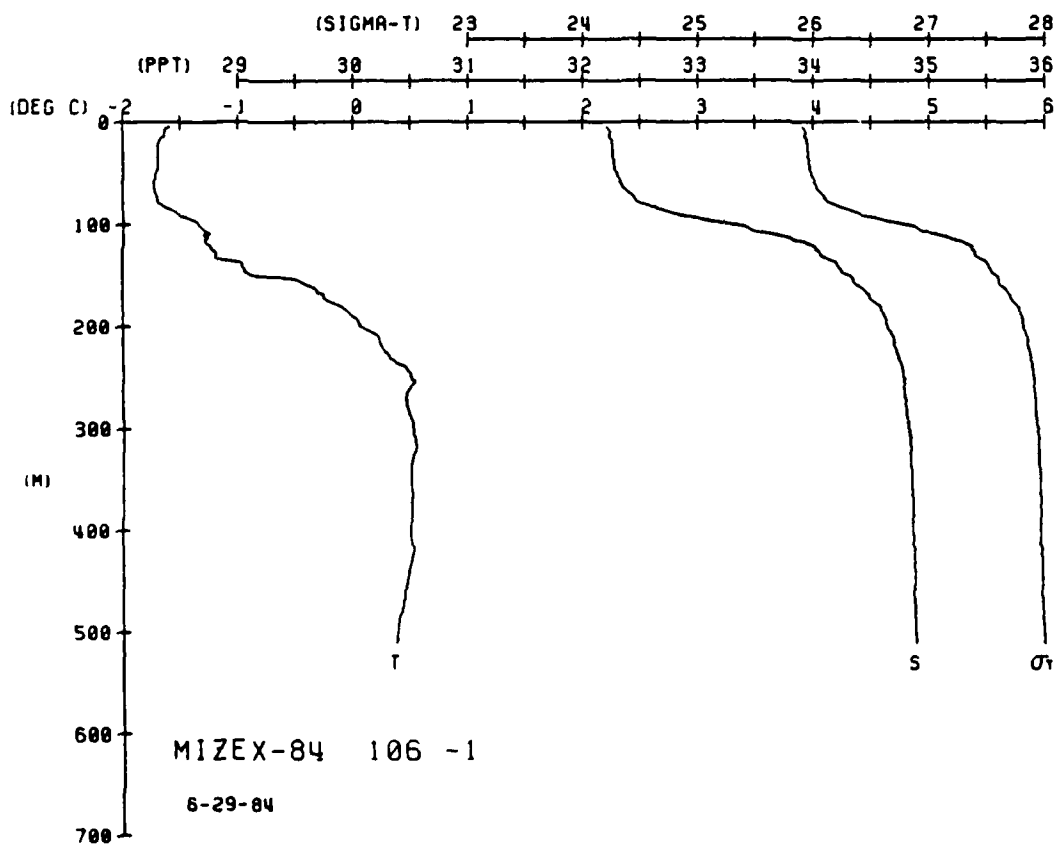
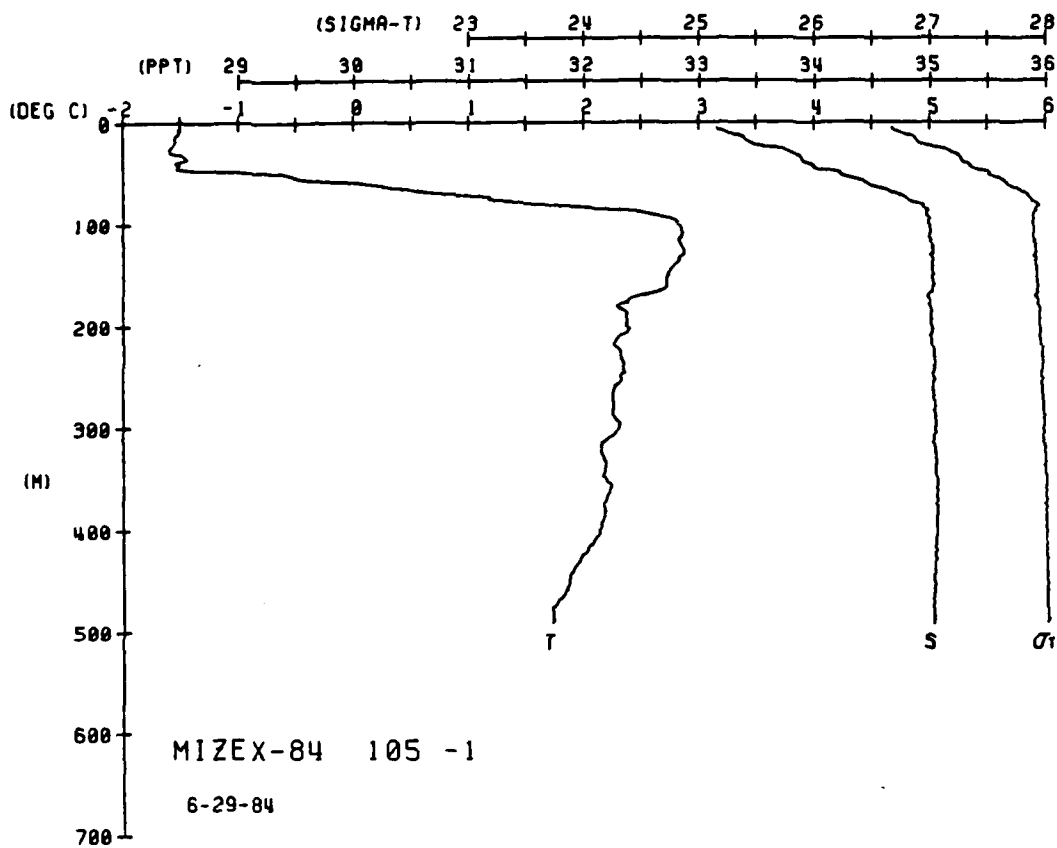
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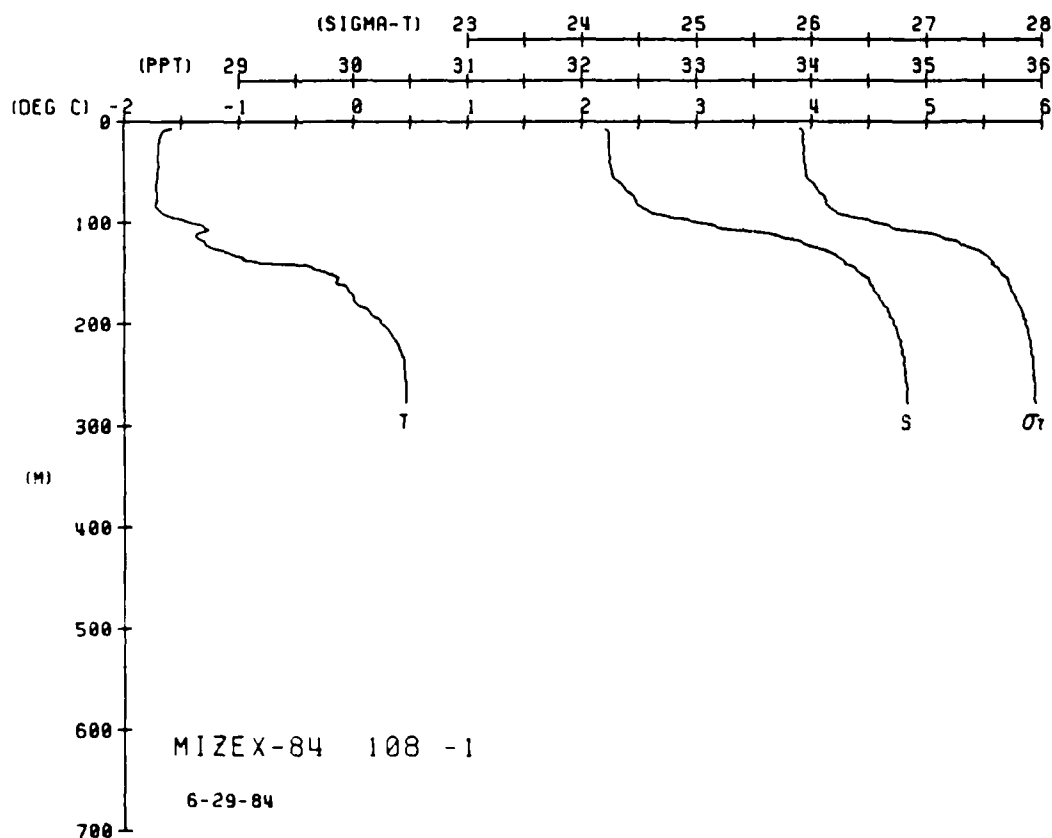
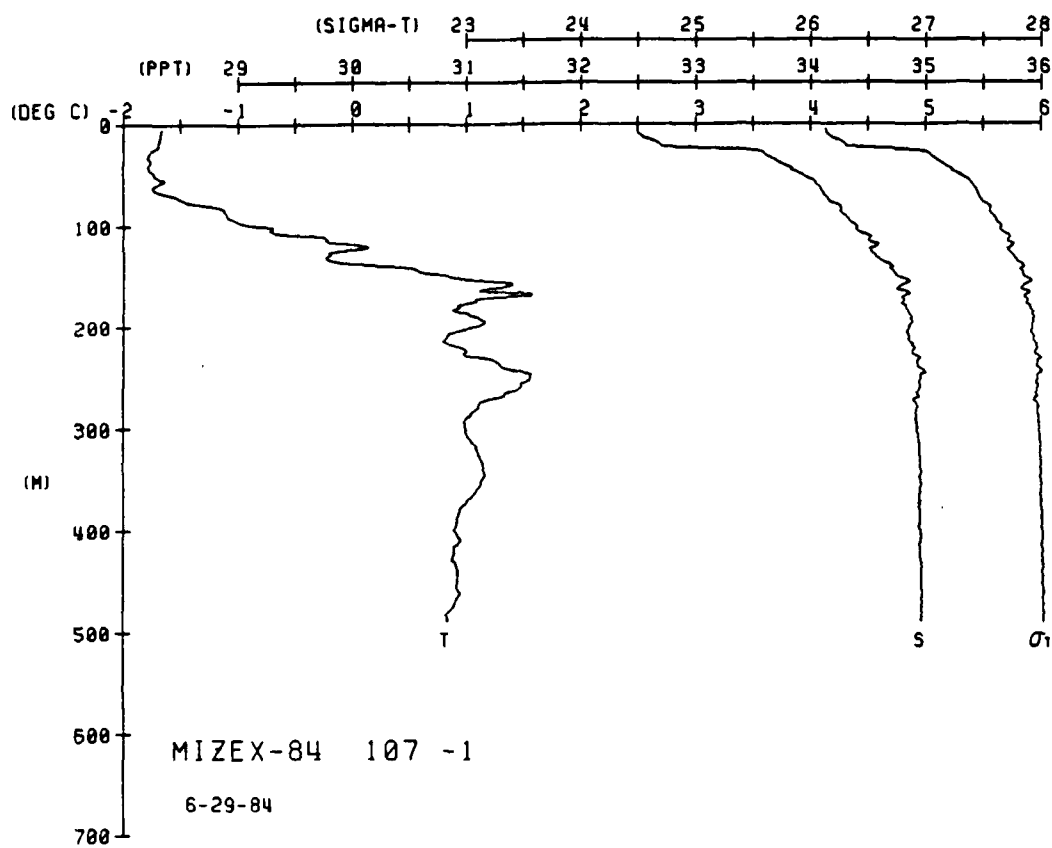


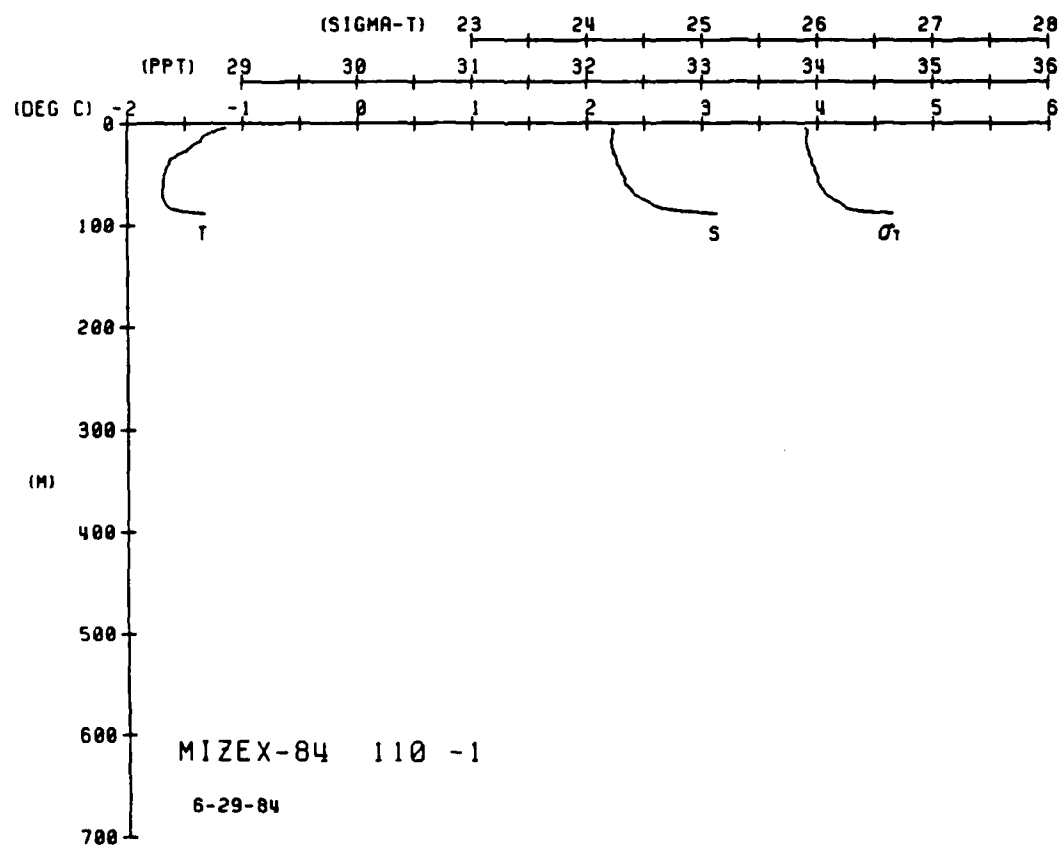
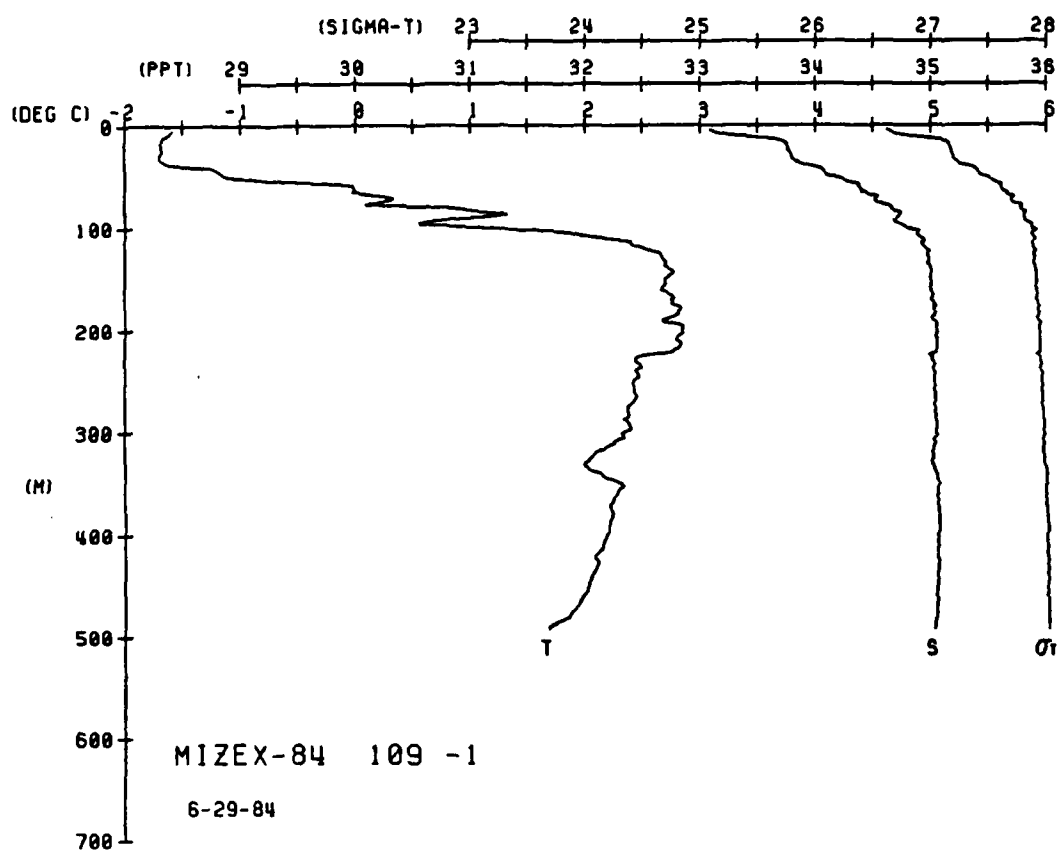
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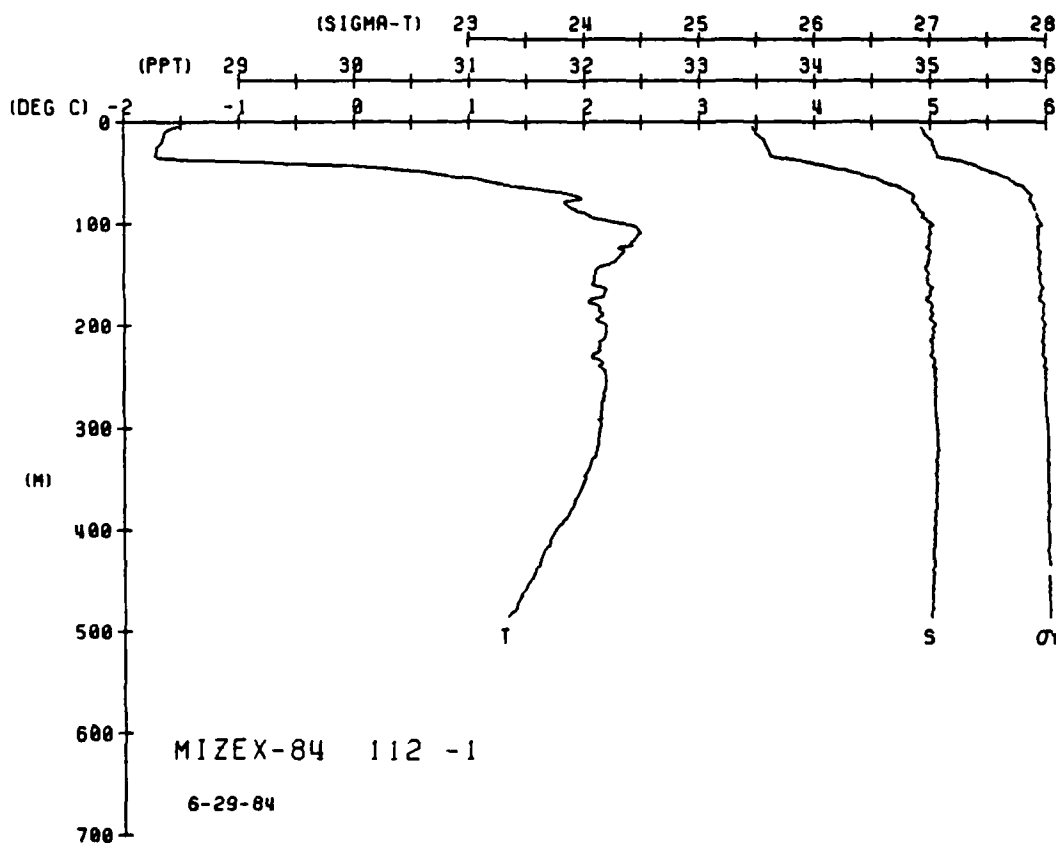
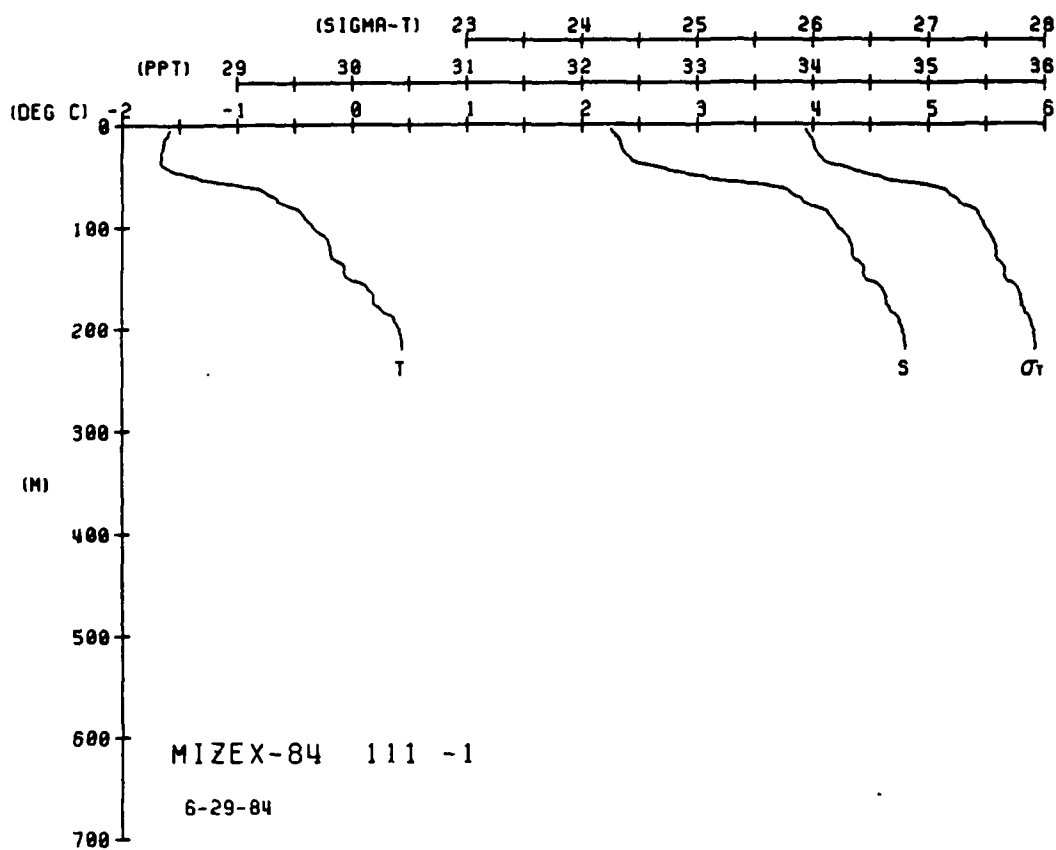
WIZEX-04 STATION 105(1) CTD 29/JUN/1984 1329 GMT CODE = 1
LAT = 00.4917N LNC = 0.533E LTER = 150. LGR = 150.
WIND TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

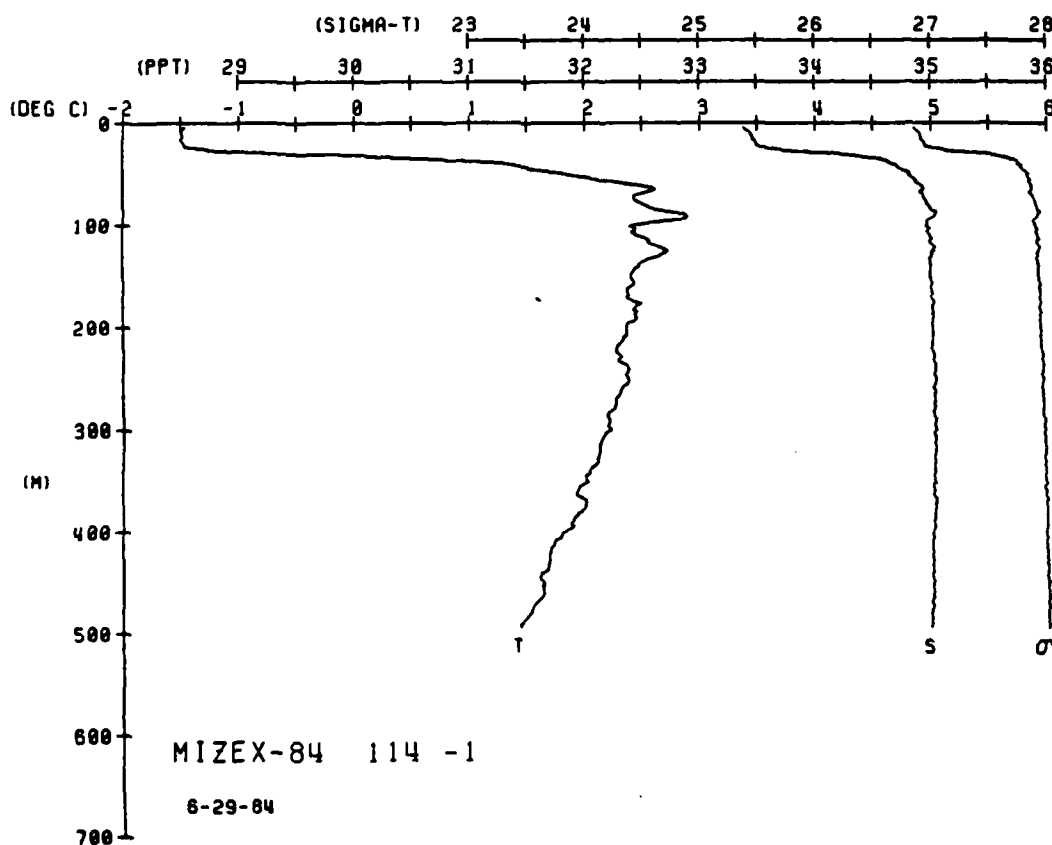
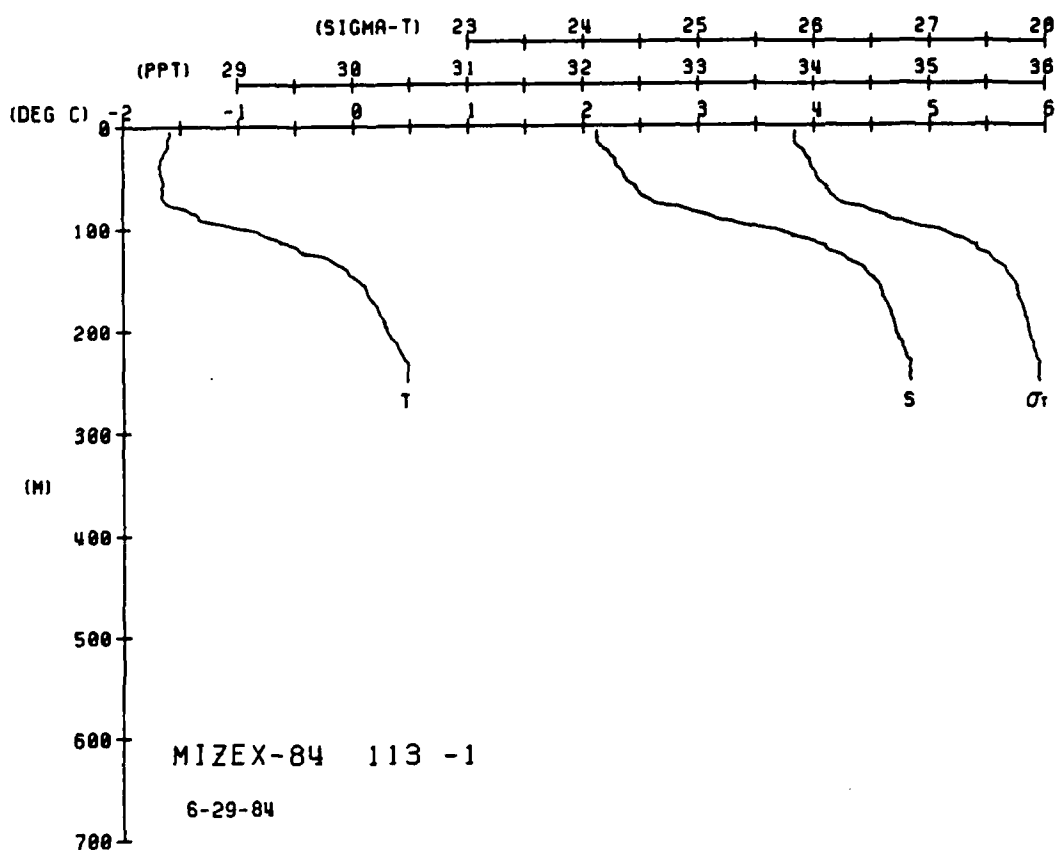
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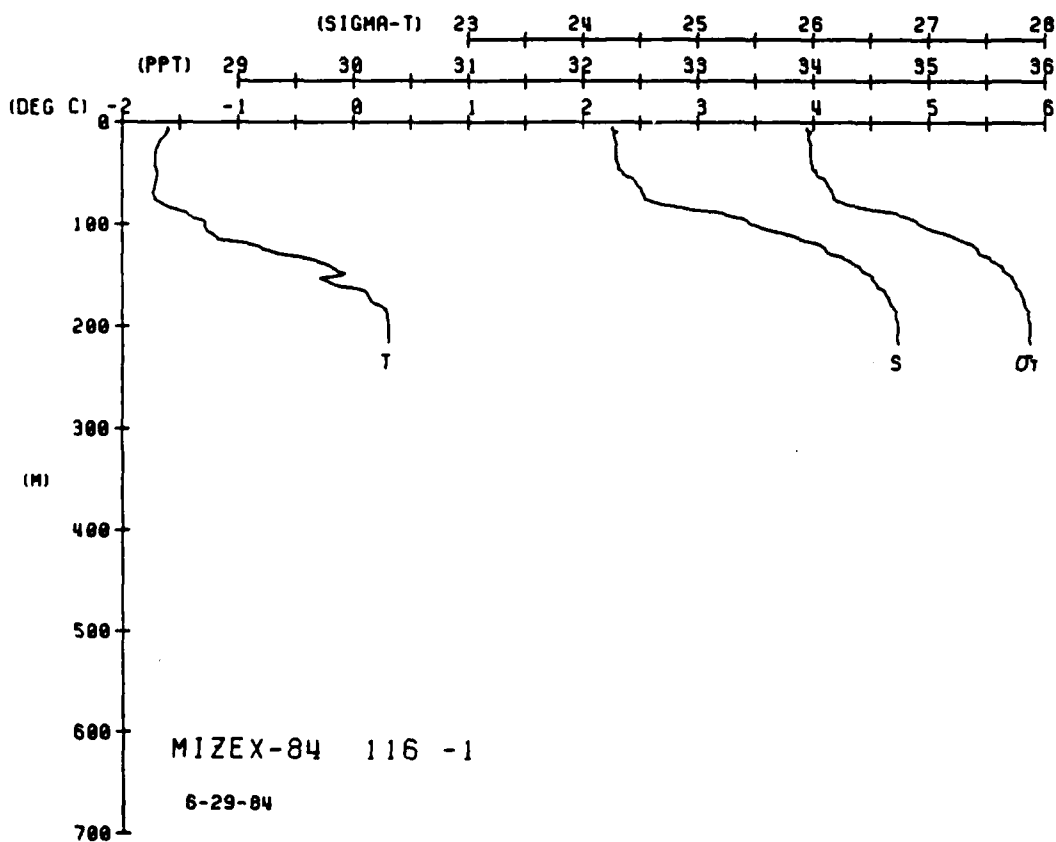
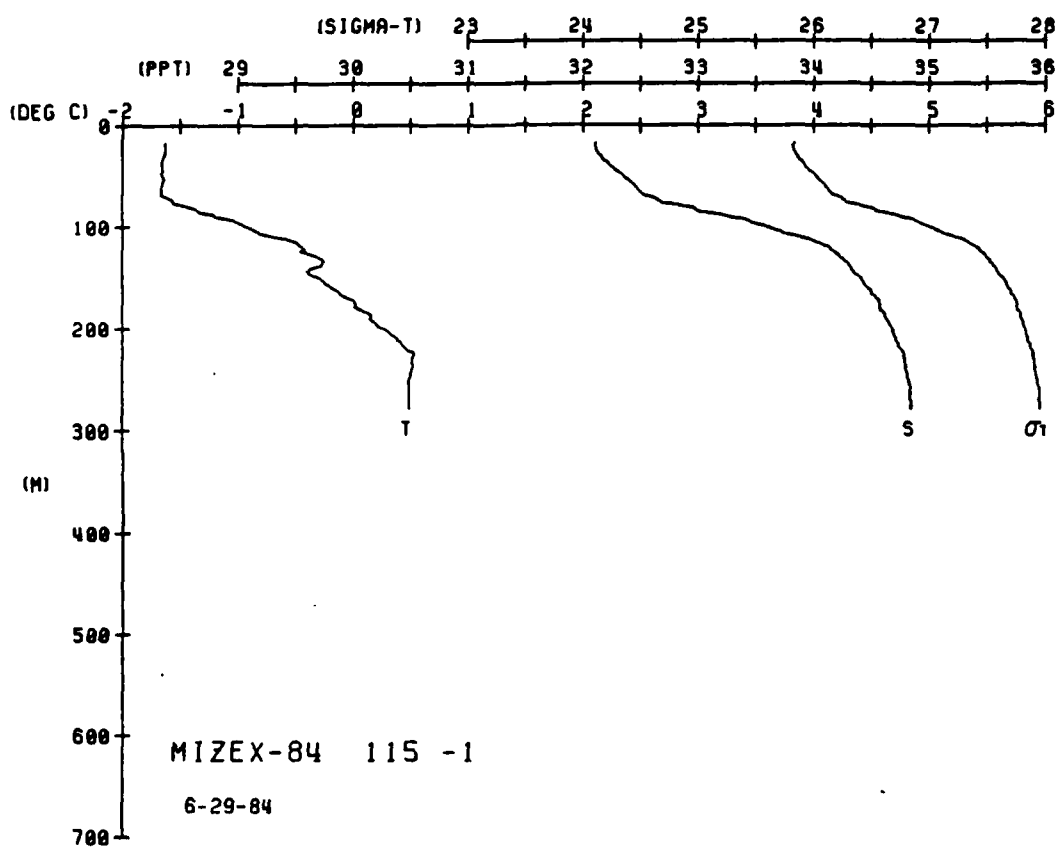


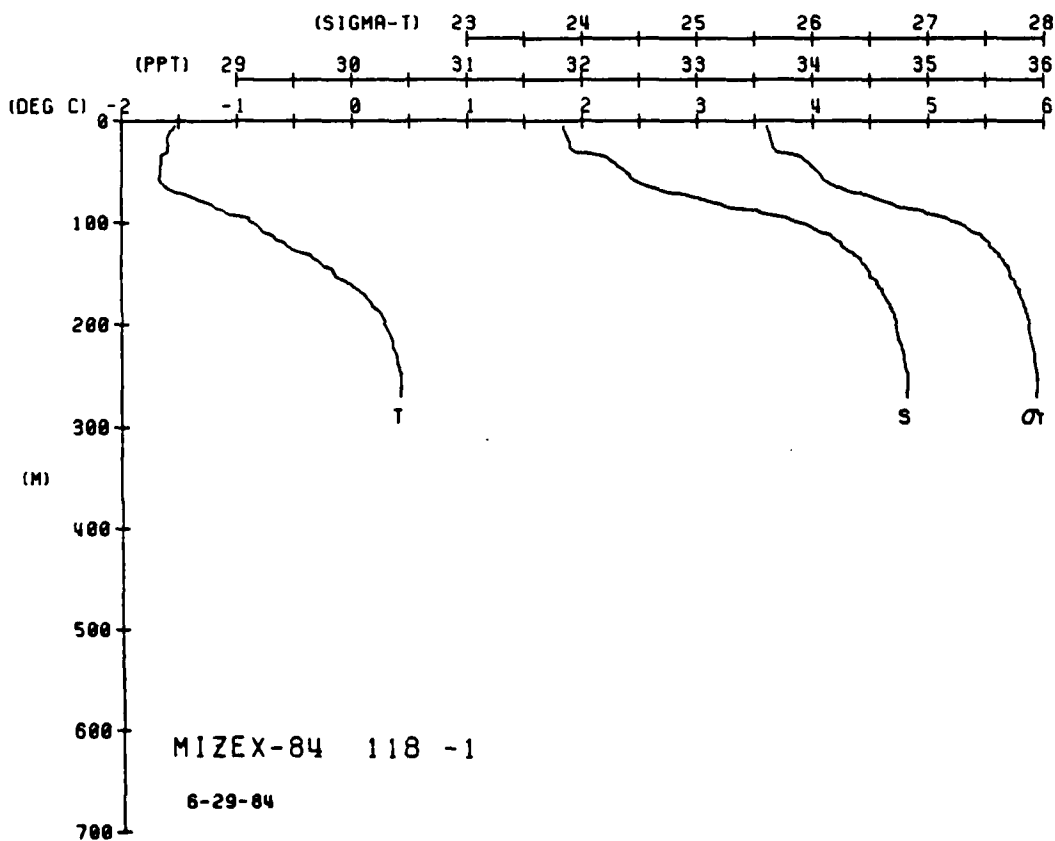
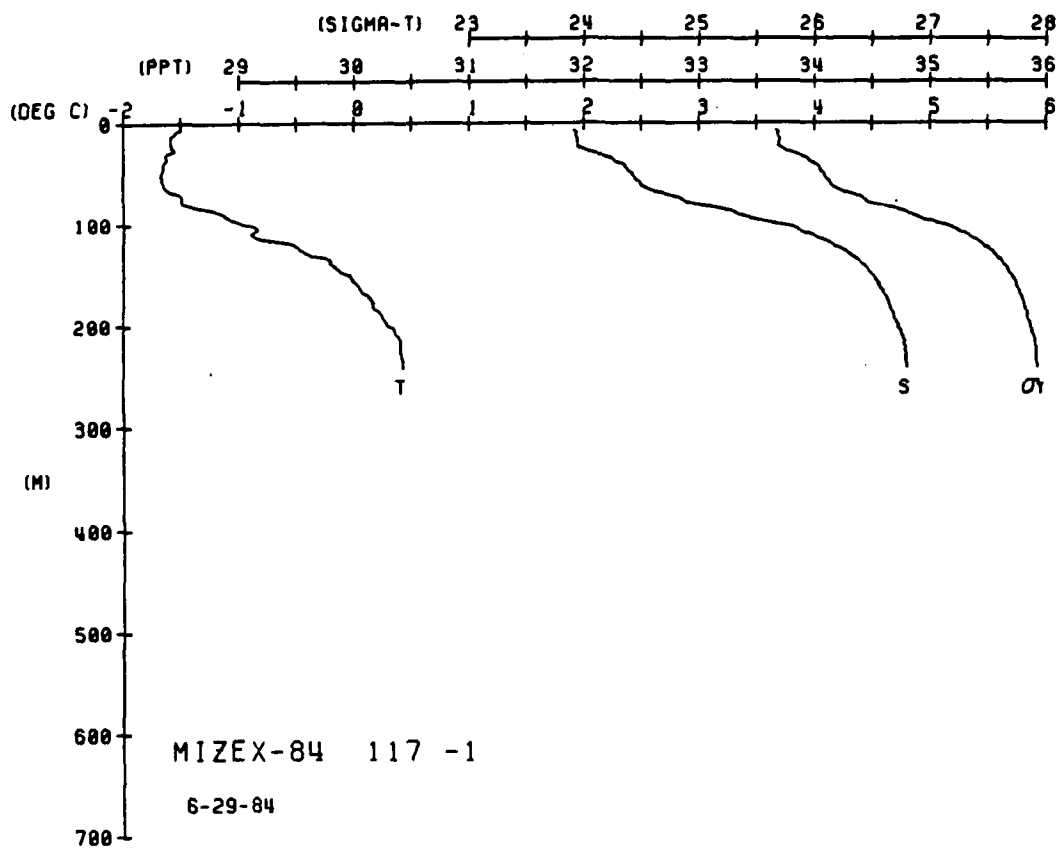


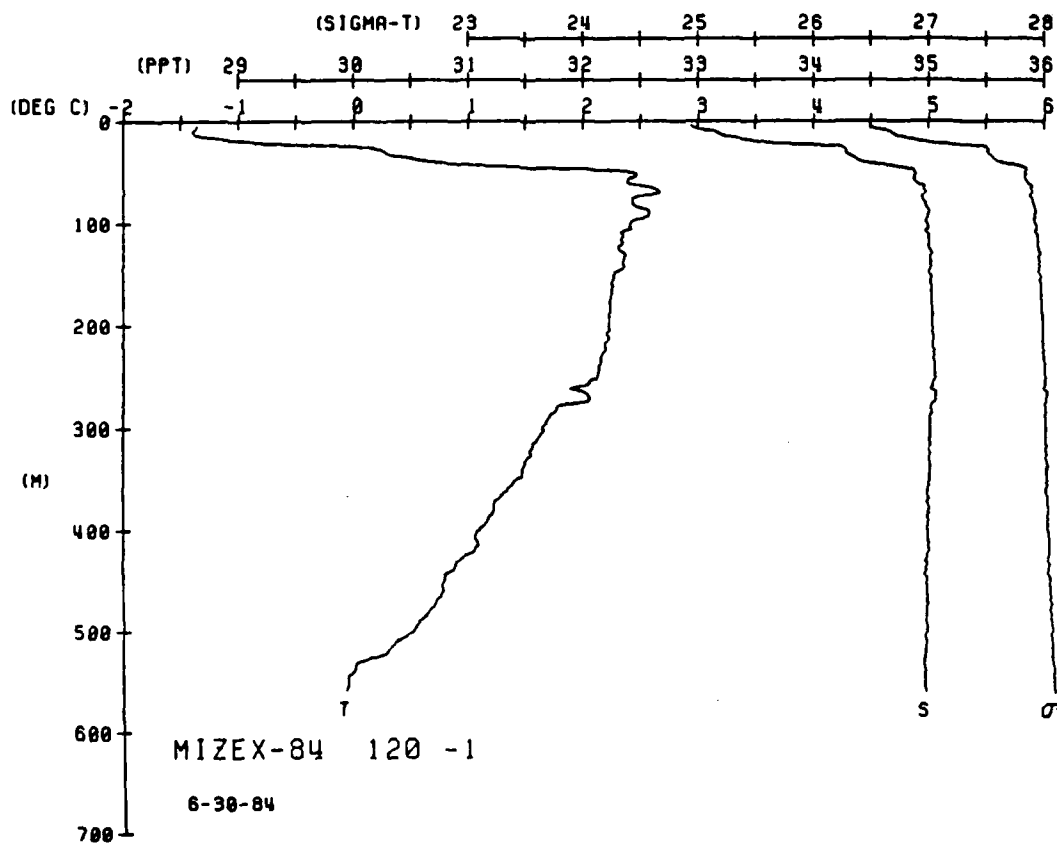
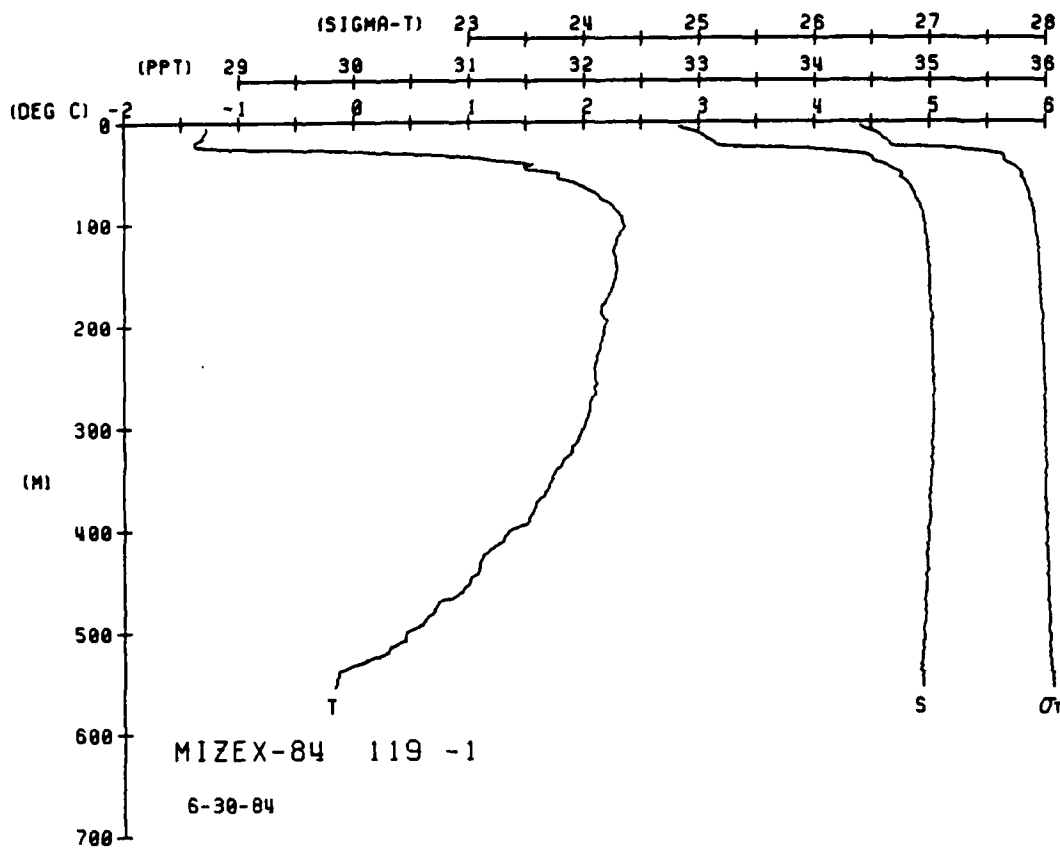




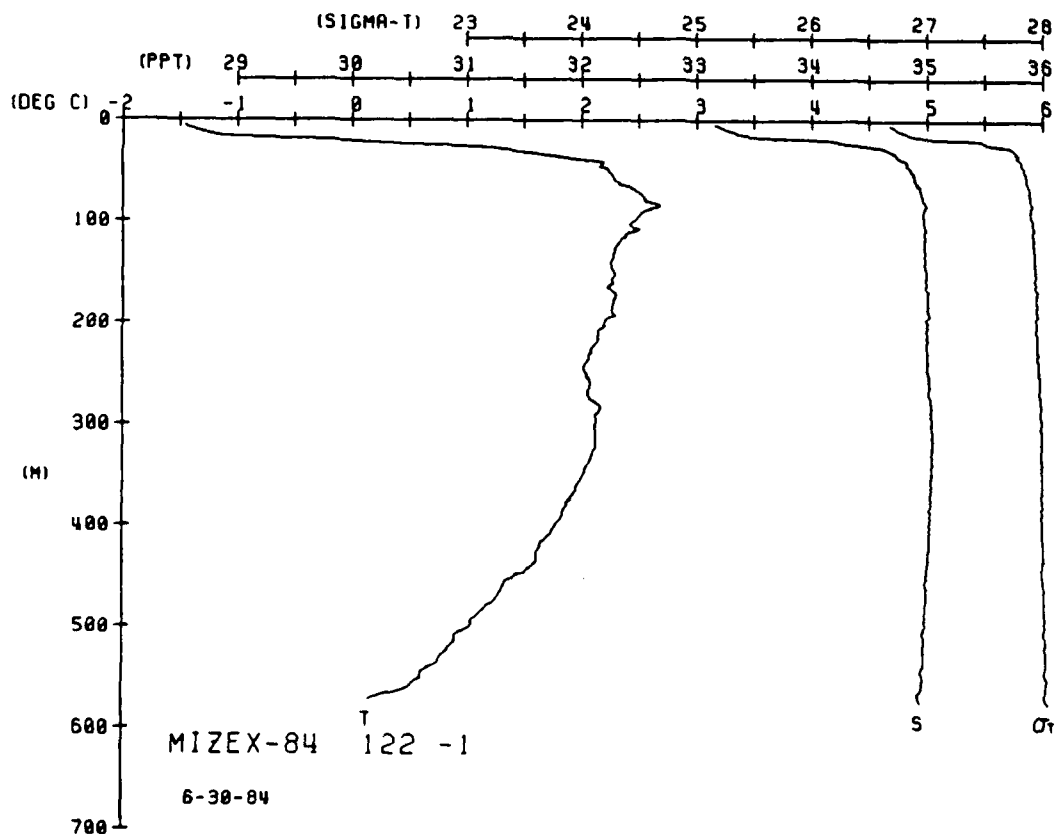
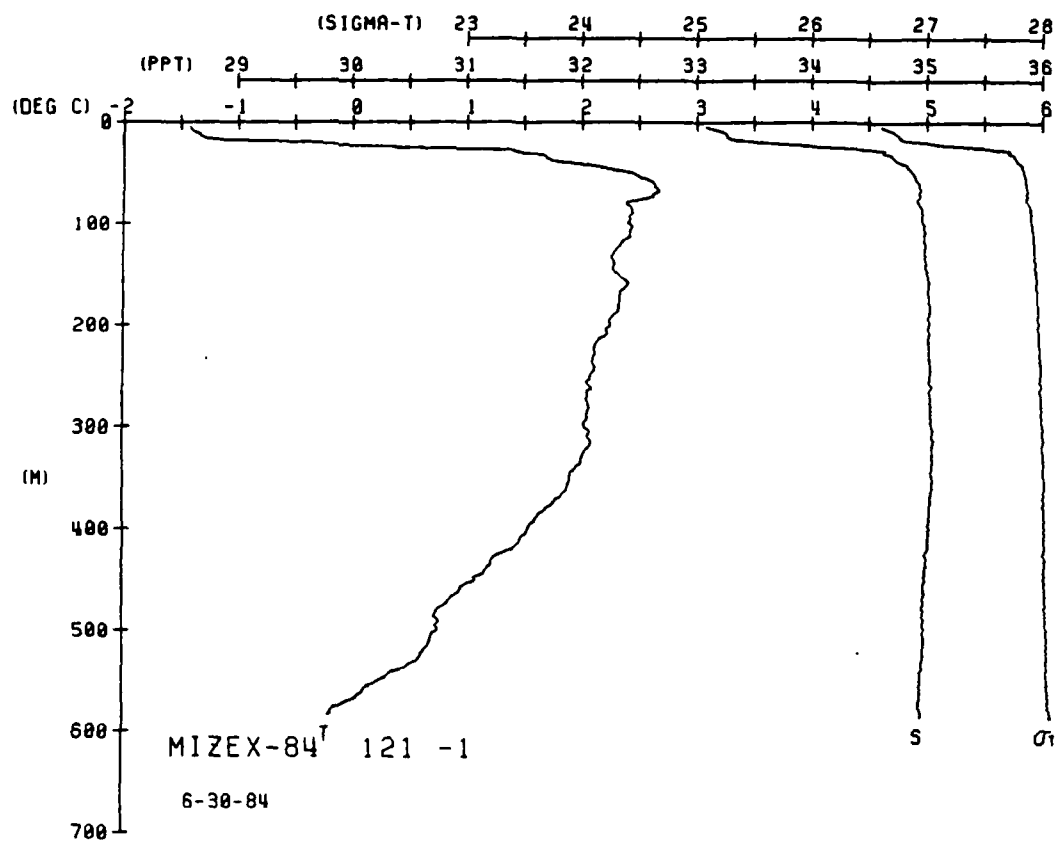


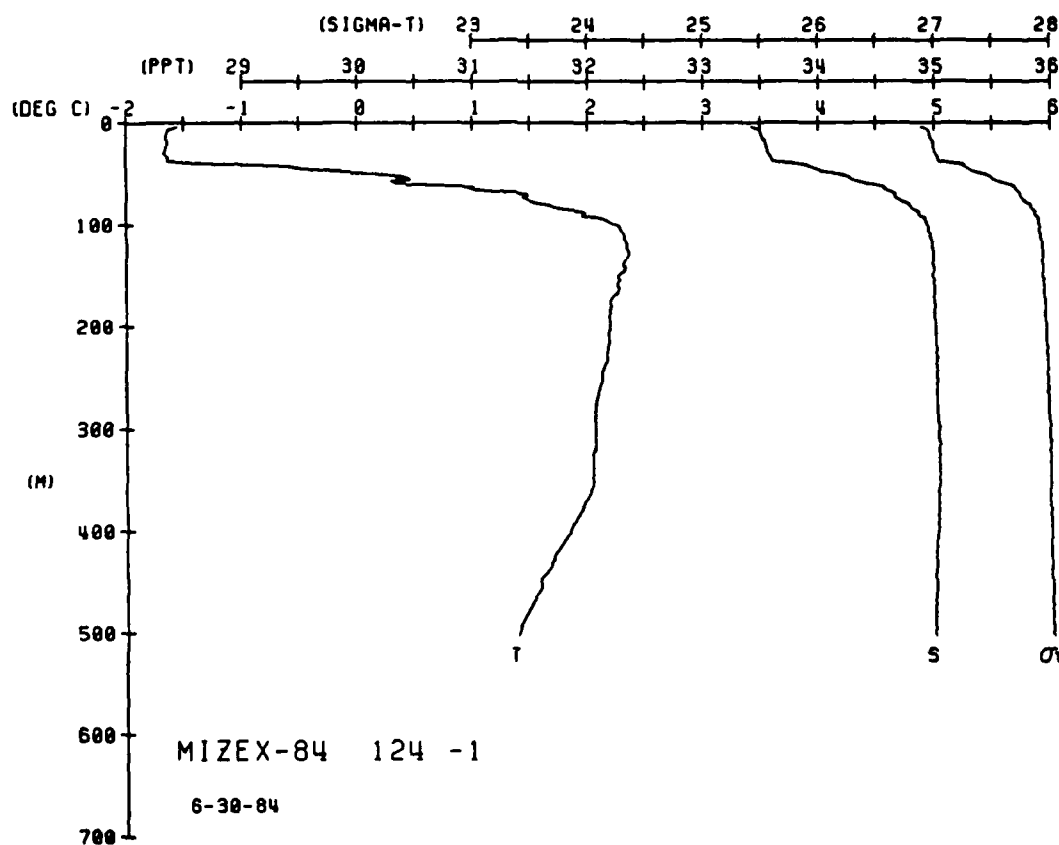
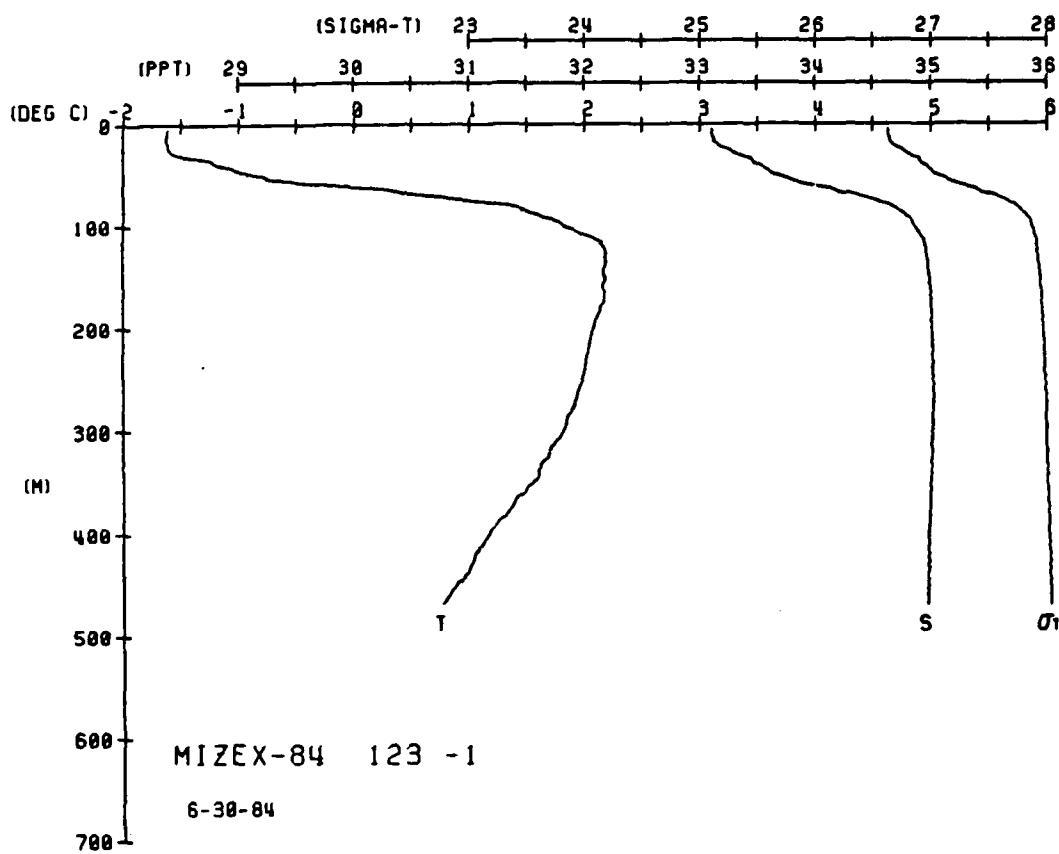


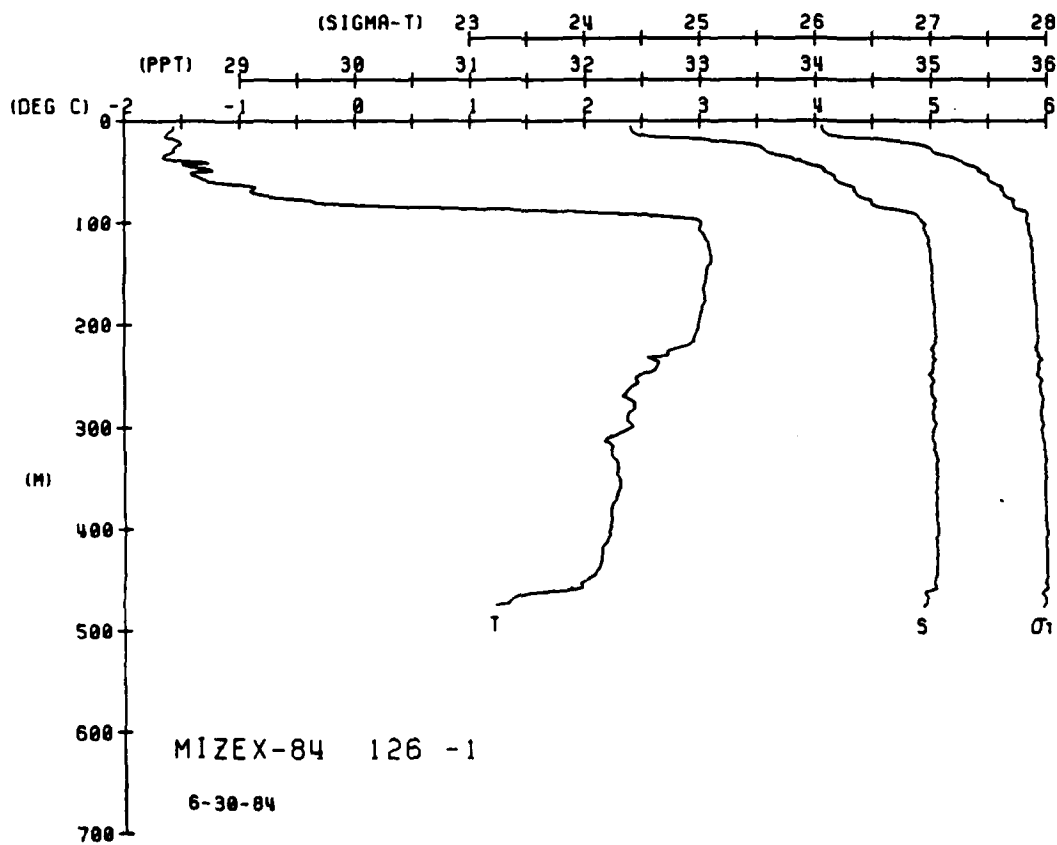
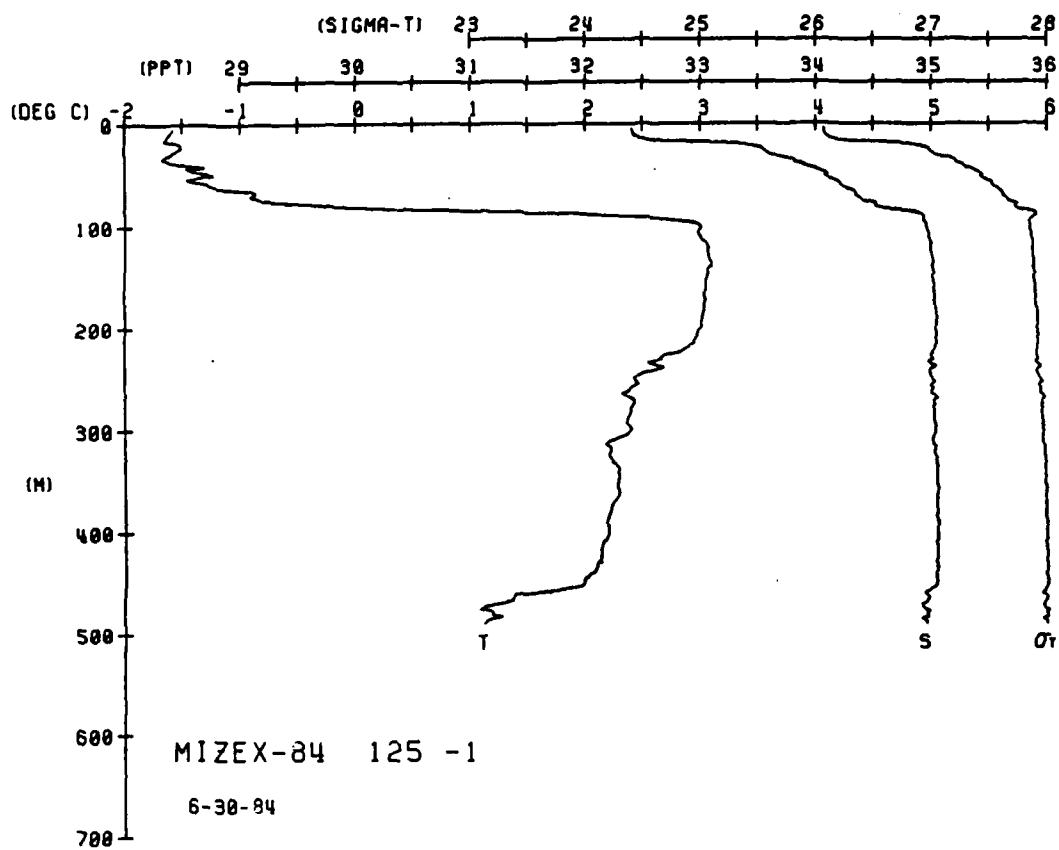




NINE-04 STATION 121(1) CTD 30/JUN/1984 1206 GMT CODE = 1
 NINETY = 00.5303M LNC = 5.9167E LTR = 300 LGTH = 300.
 LAIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0
 AIR TEMP = 0.0 WIND = 0.0 SPEED = 0.0





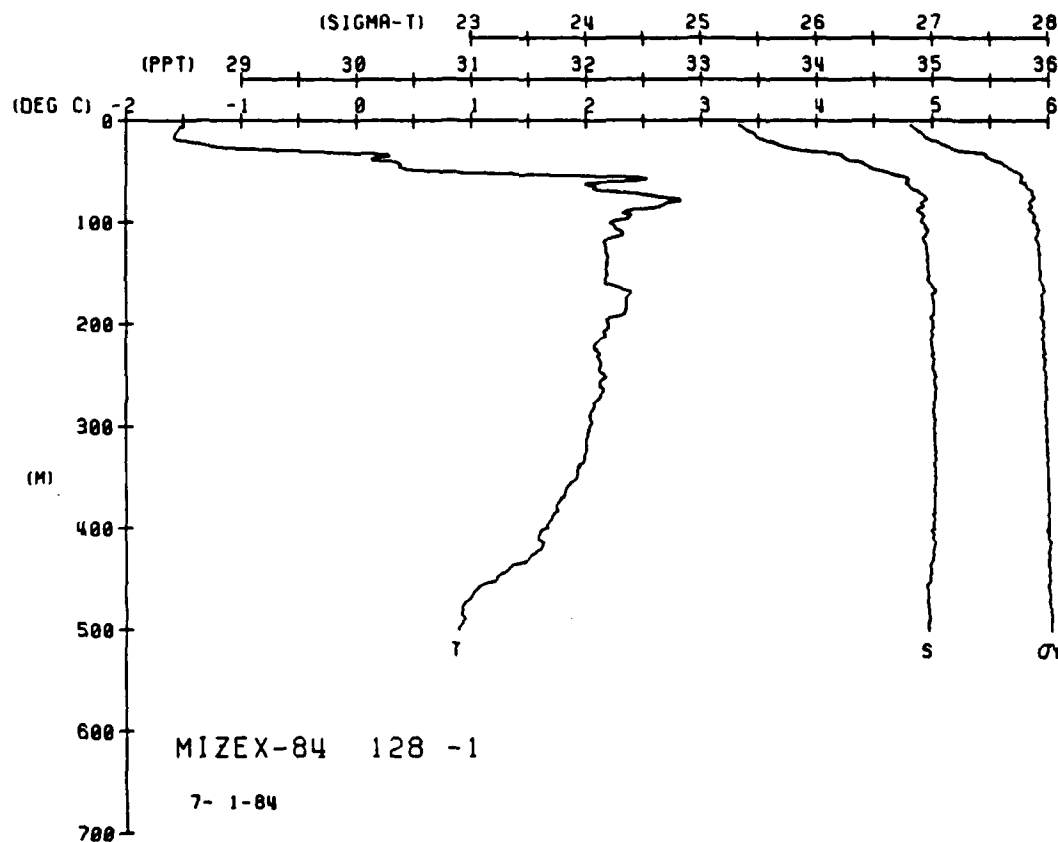
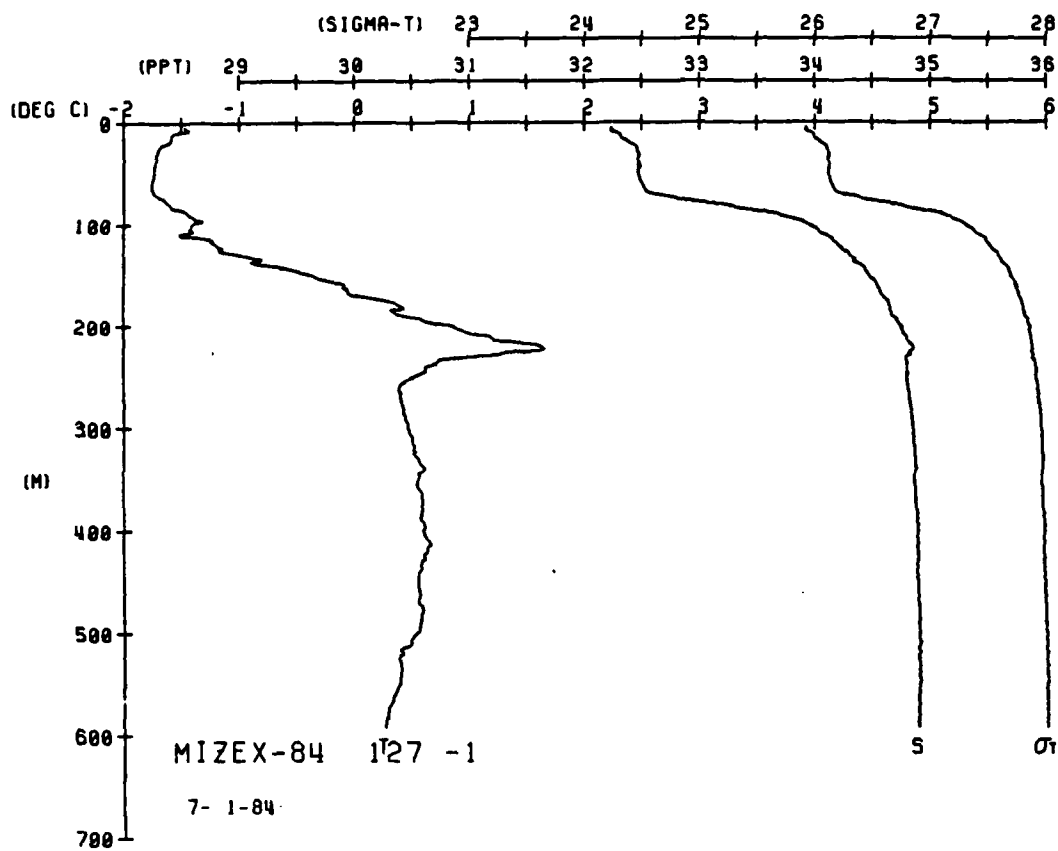


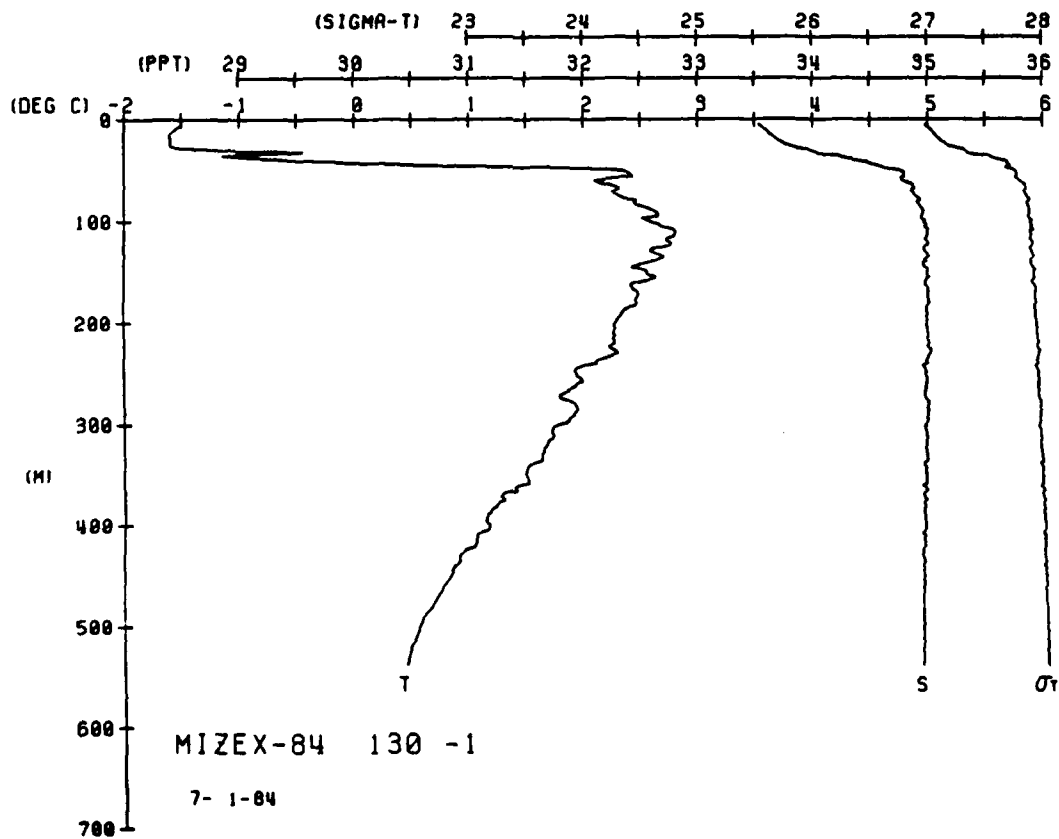
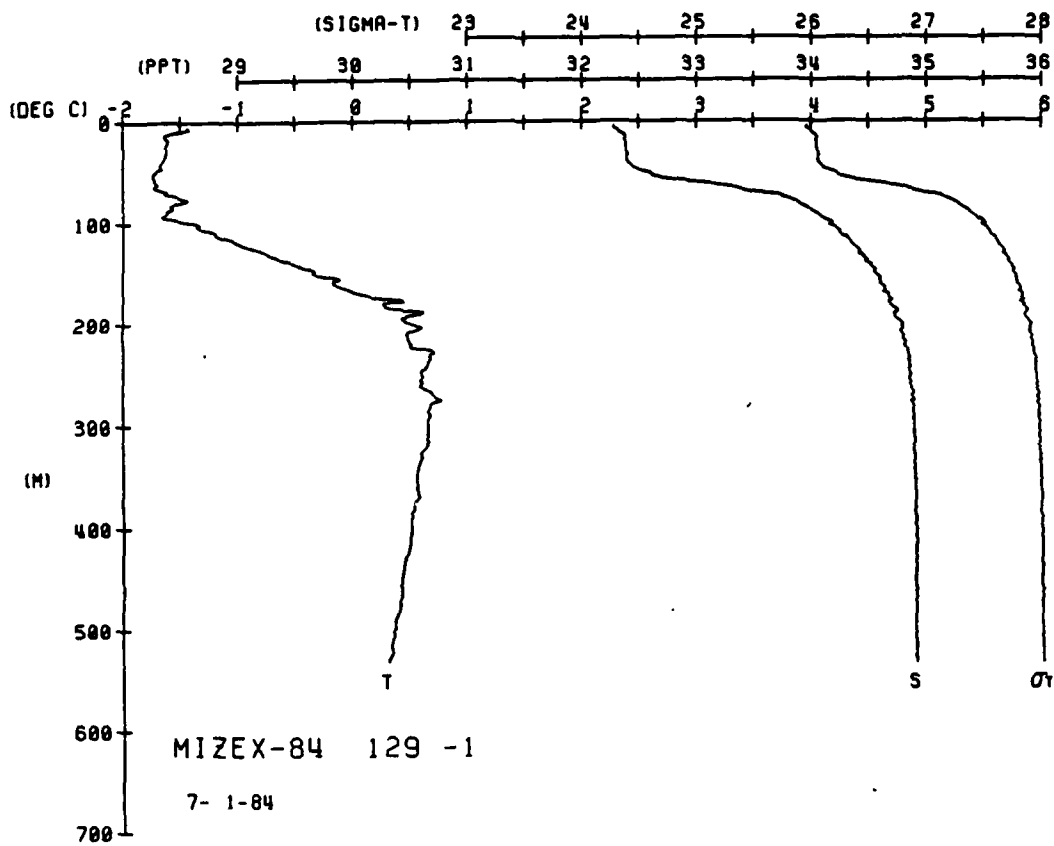
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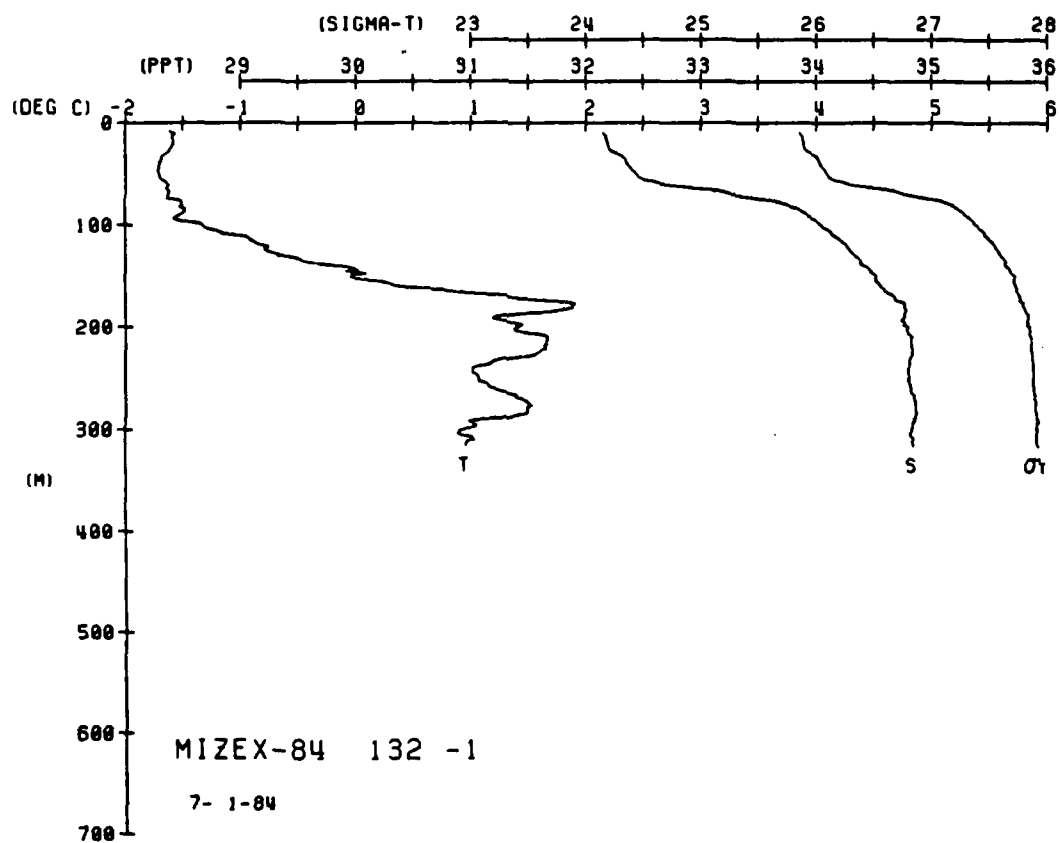
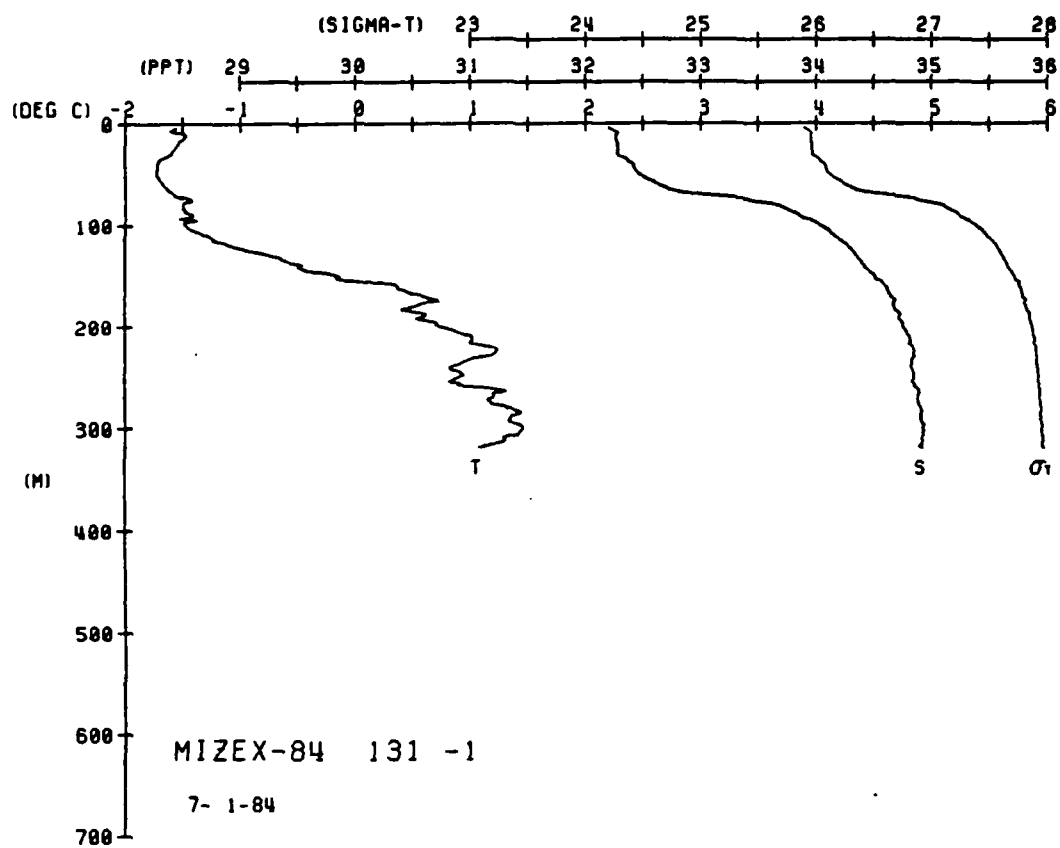
MIXER-04 STATION 127(1) CTD 1/JUL/1984 231 GMT CODE = 1
LAT = 79.4167N LNC = 4.2850W LTR = 30. LGER = 30.
RAIN TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

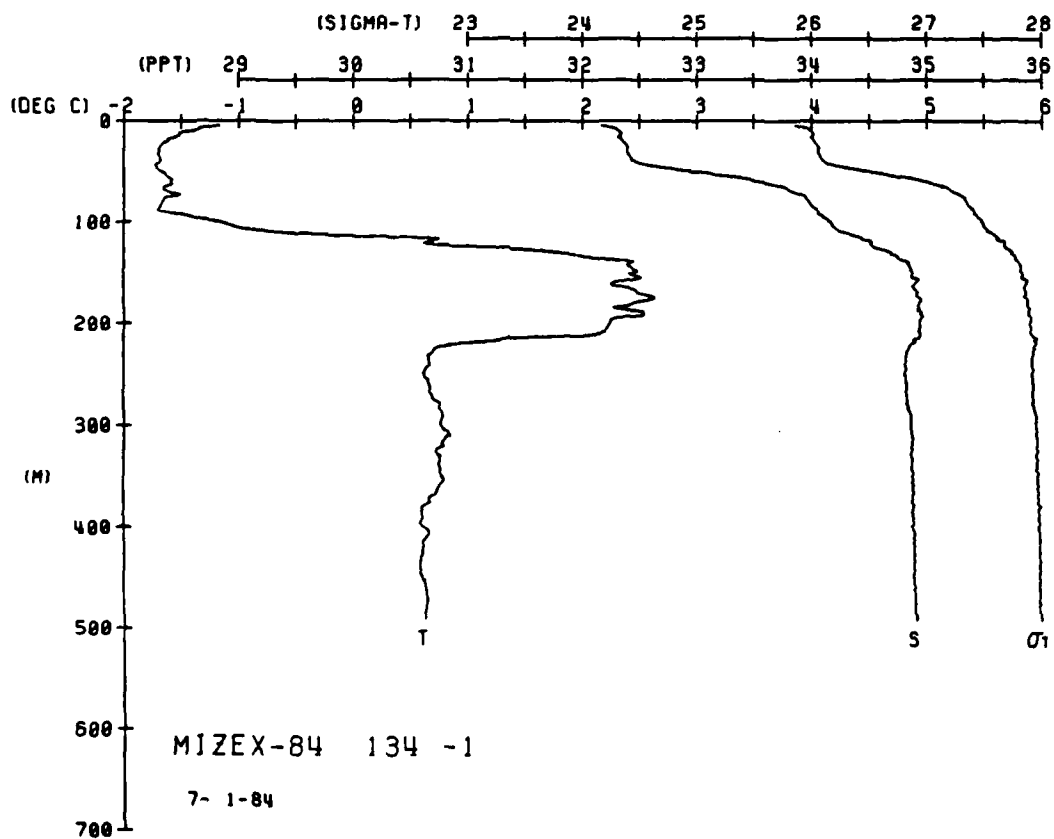
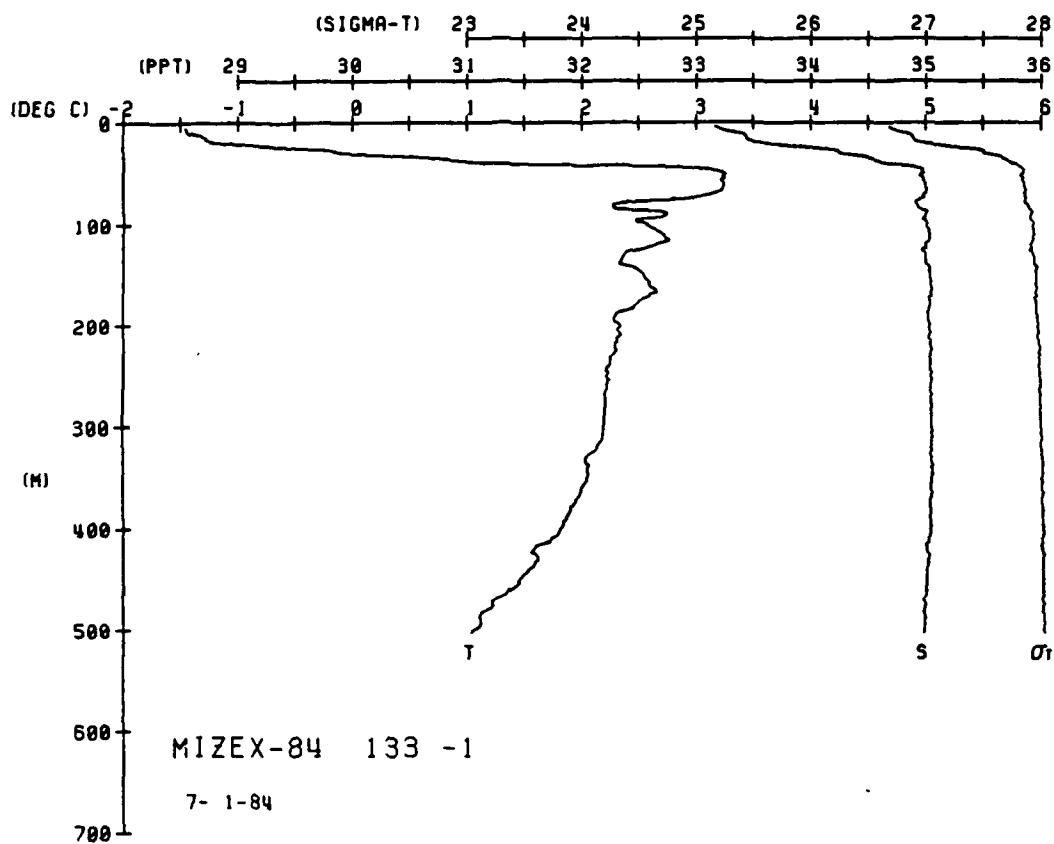
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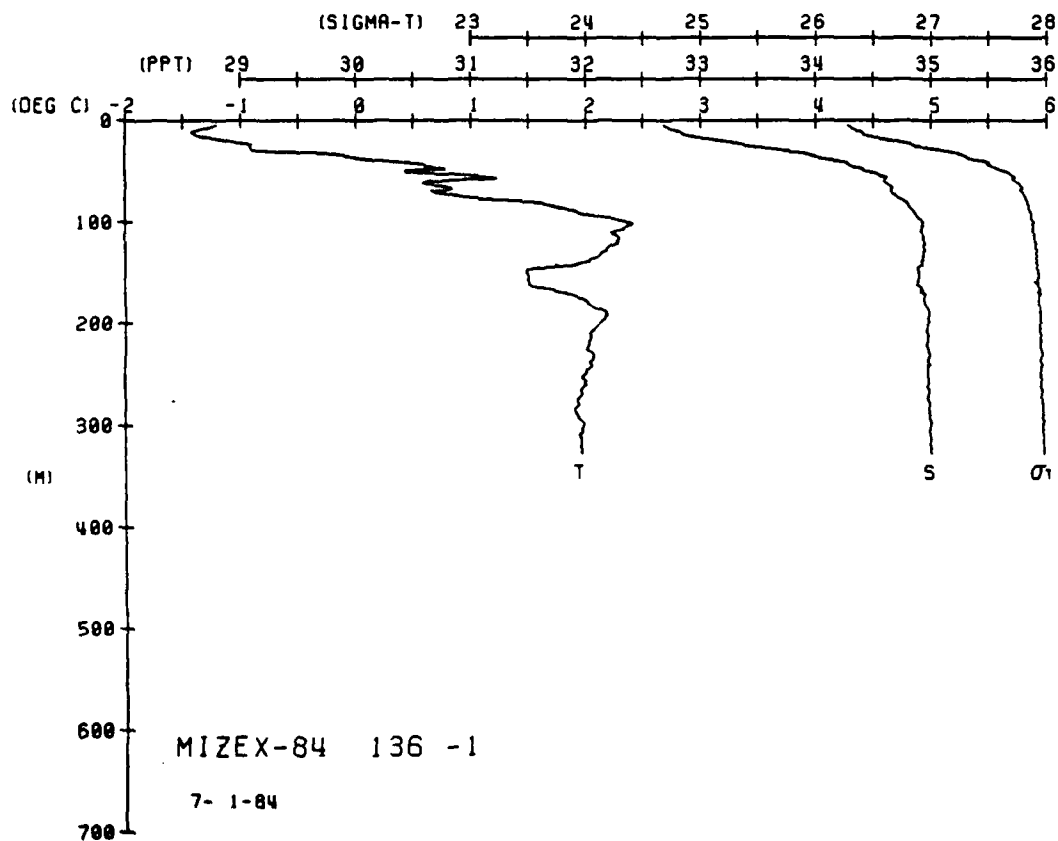
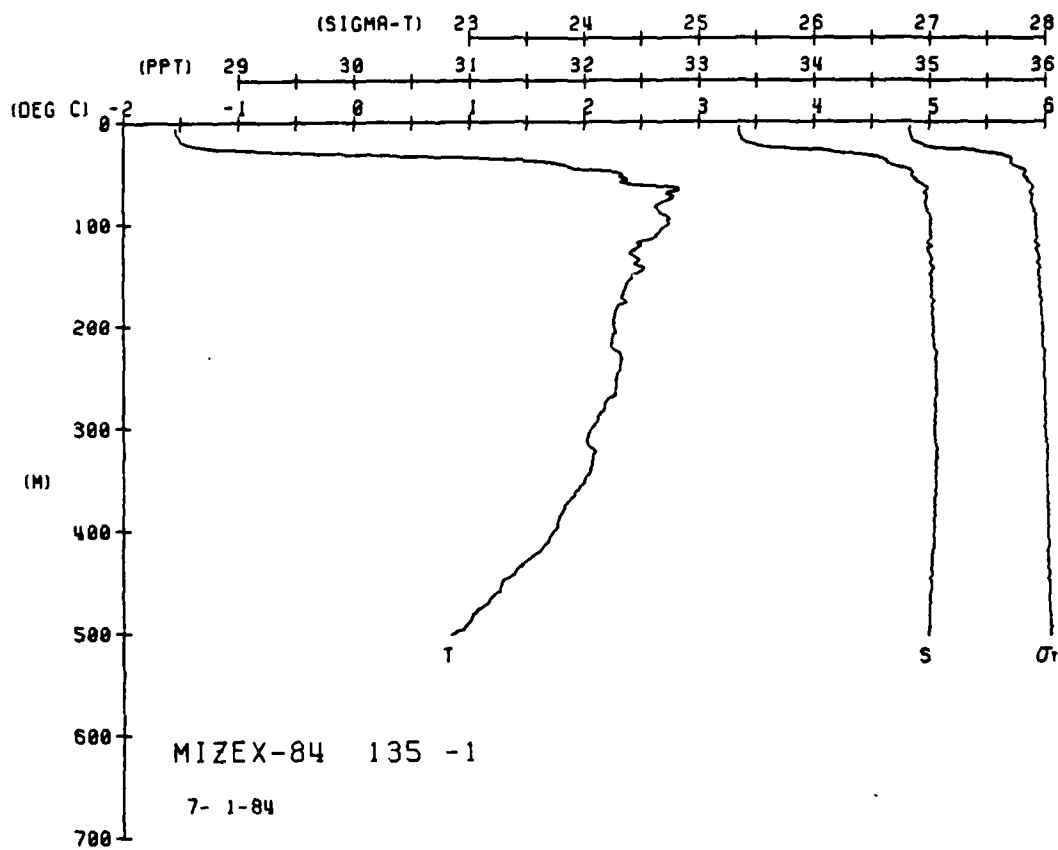
[illegible]







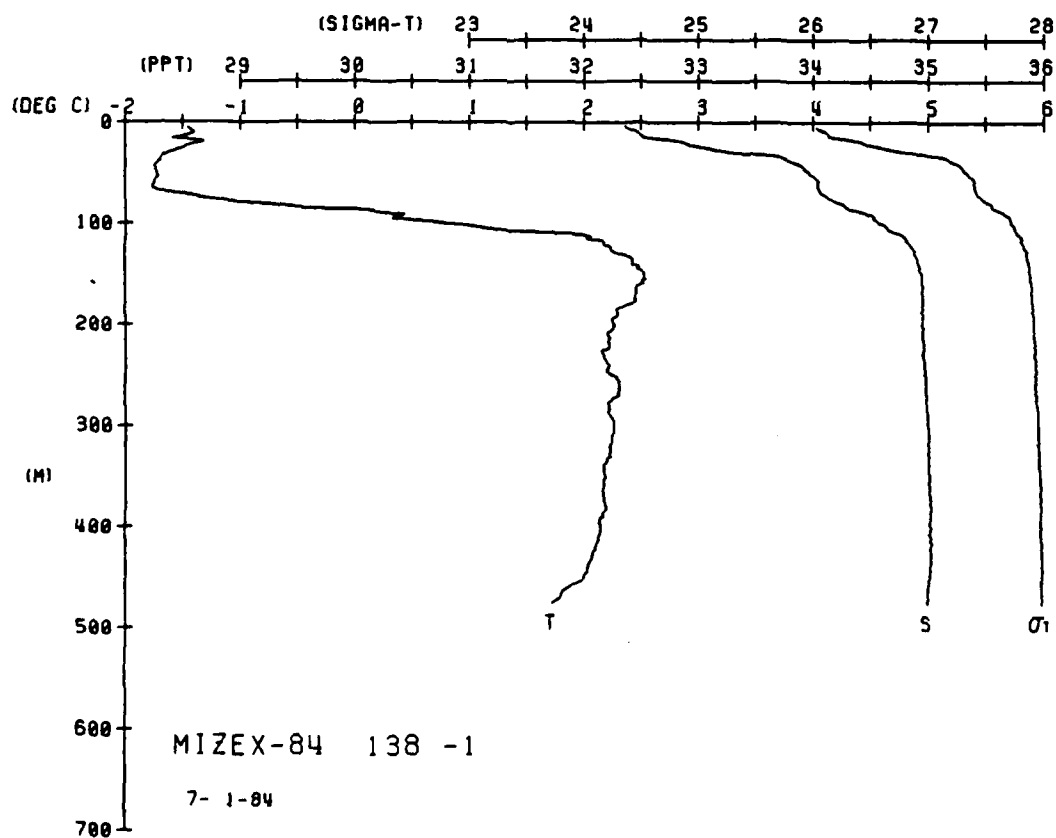
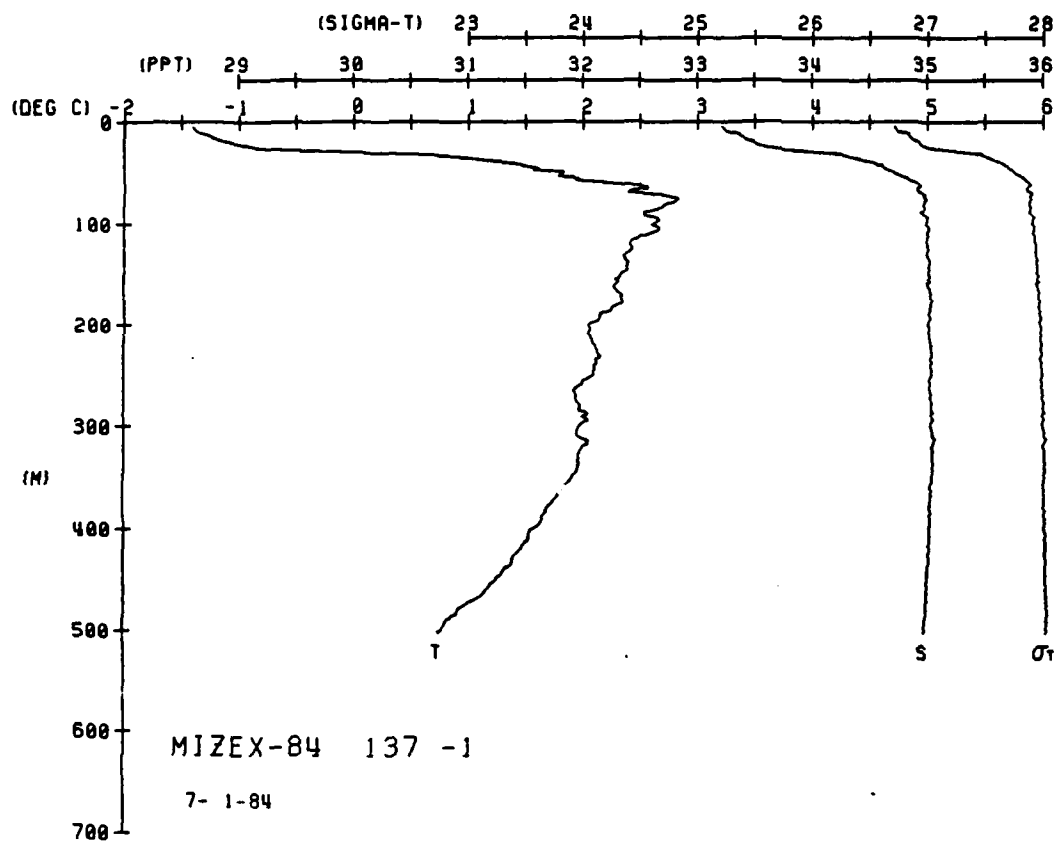


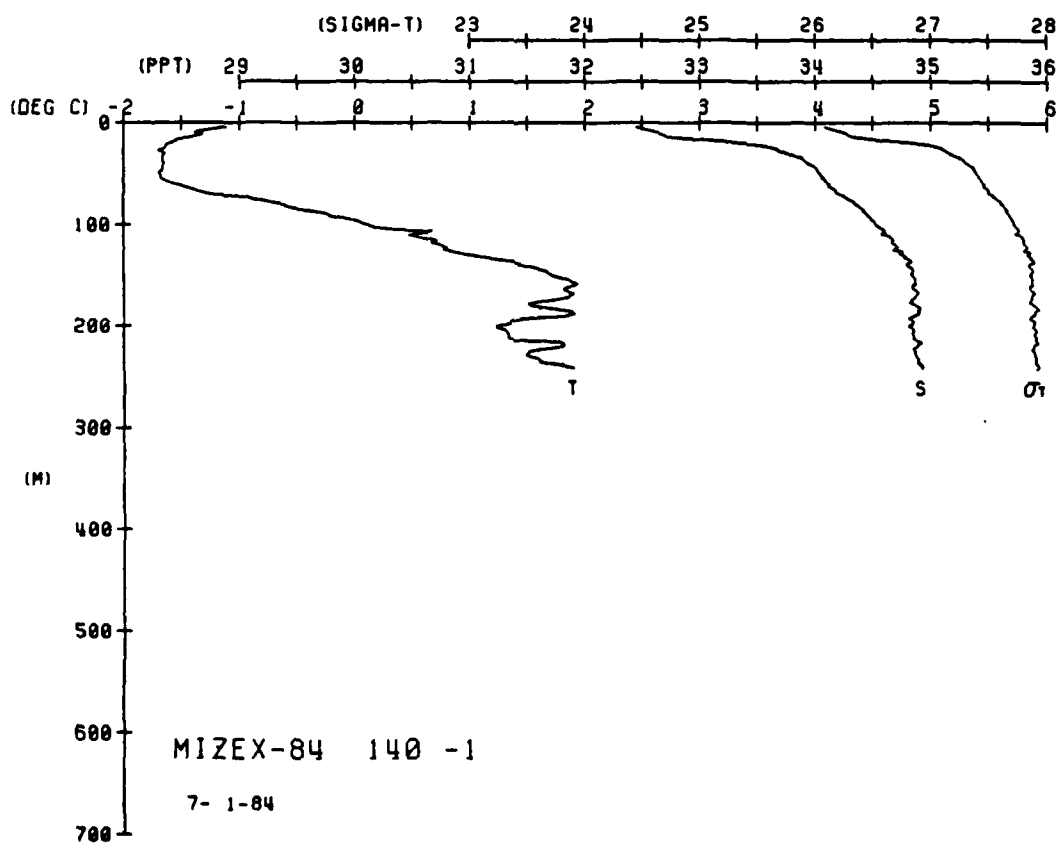
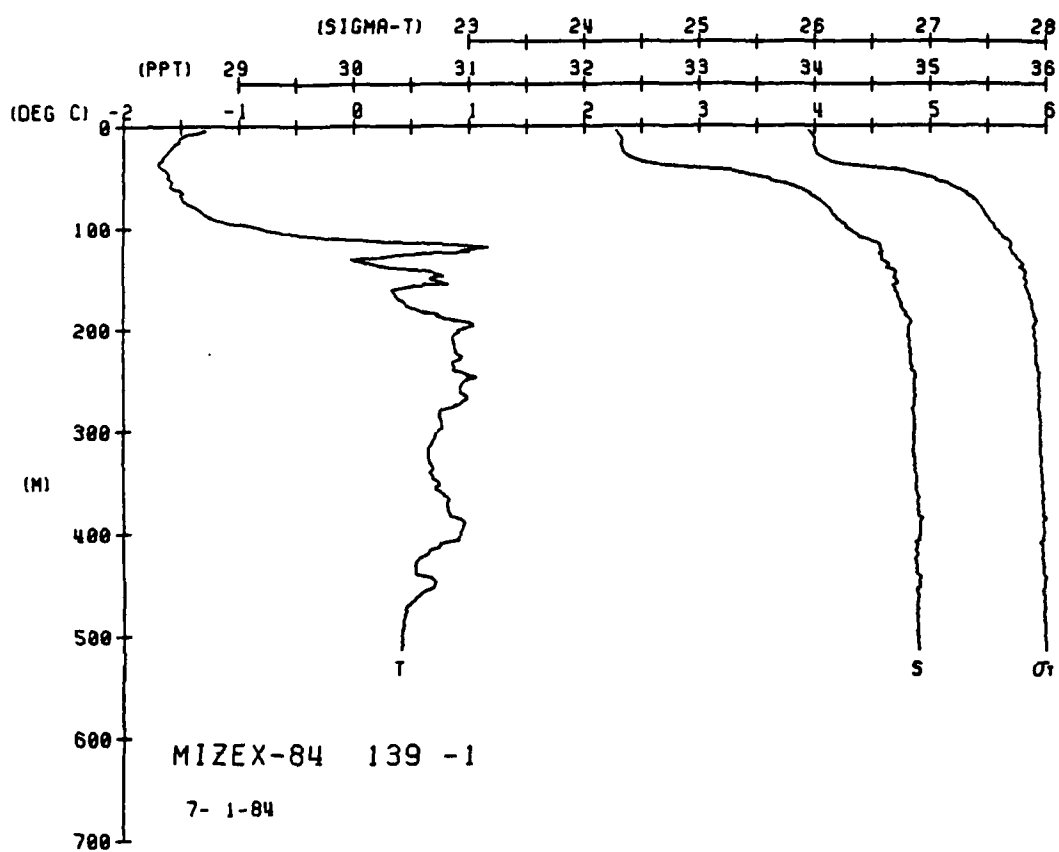


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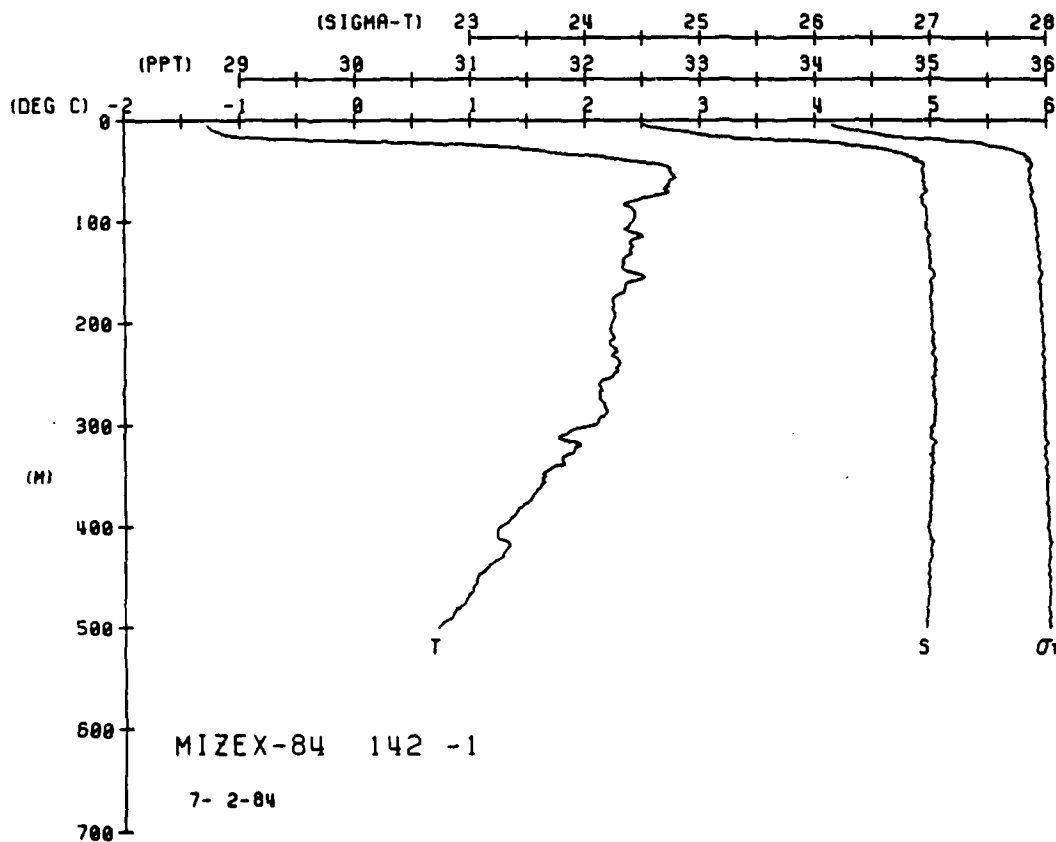
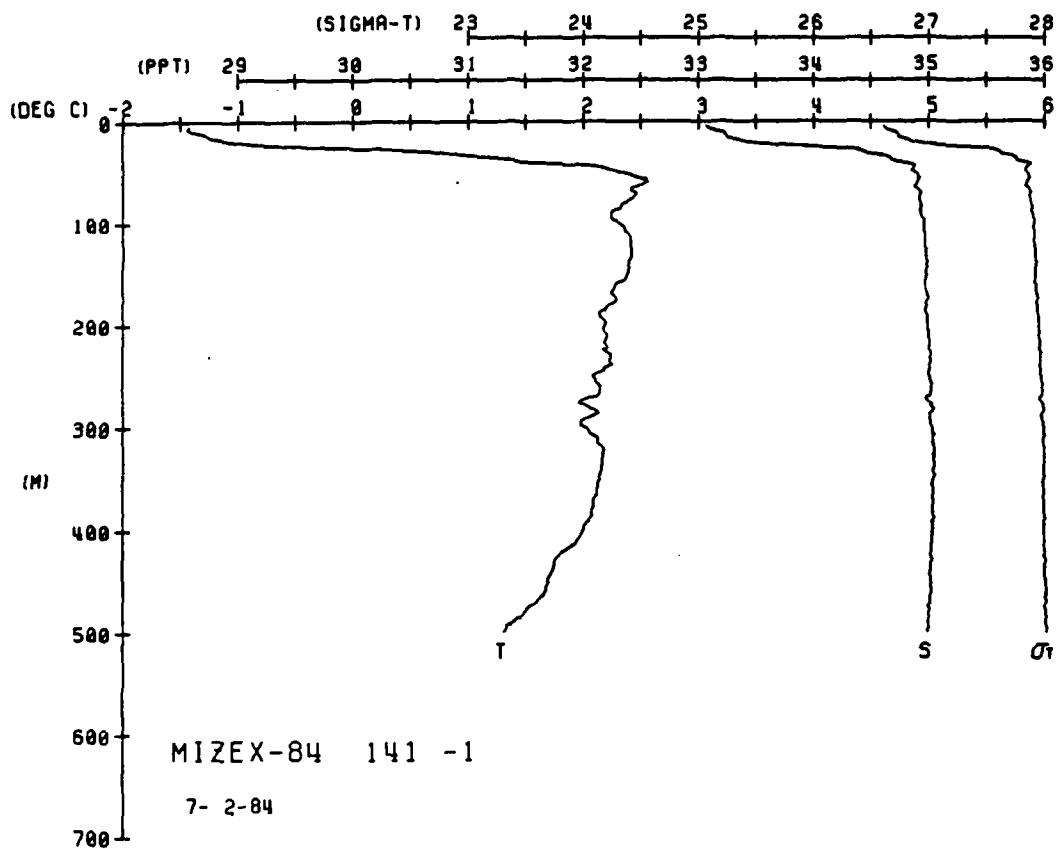
MIXEX-04 STATION 137(1) CTU 1/JUL/1984 1253 GMT CODE = 1
LAT = 80.7333N LNC = 4.7000E LTER = 150. LGR = 150.
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

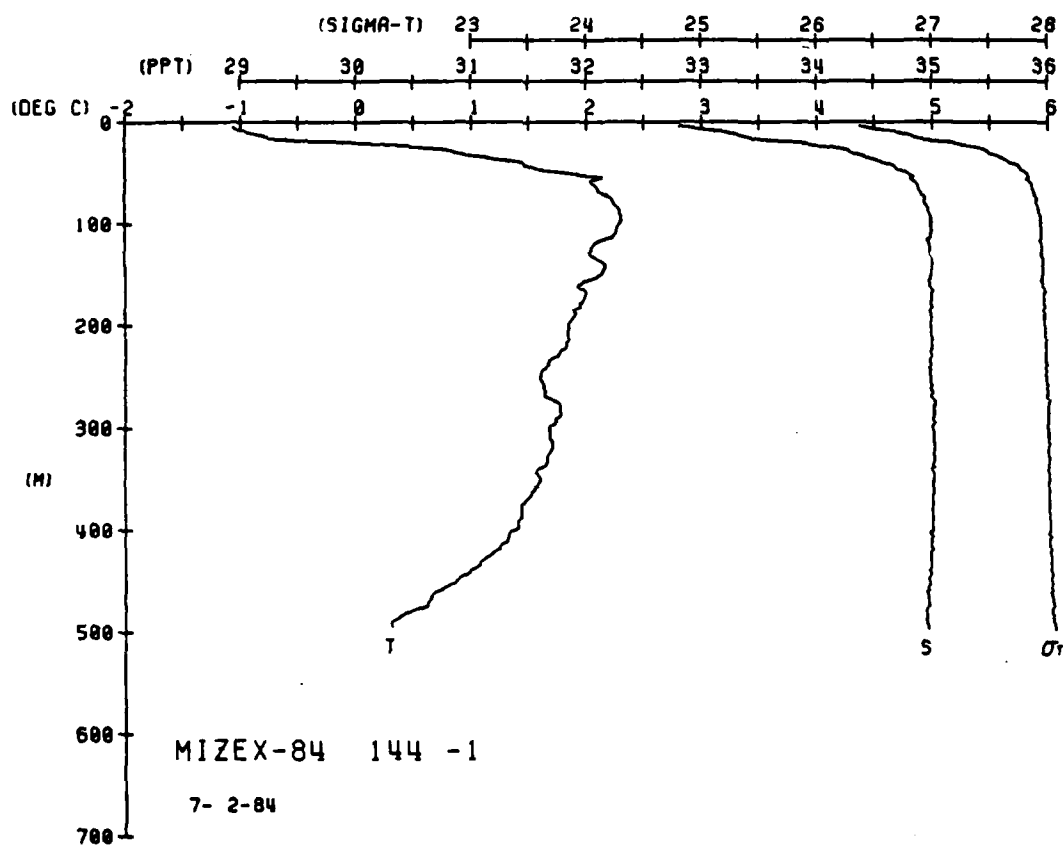
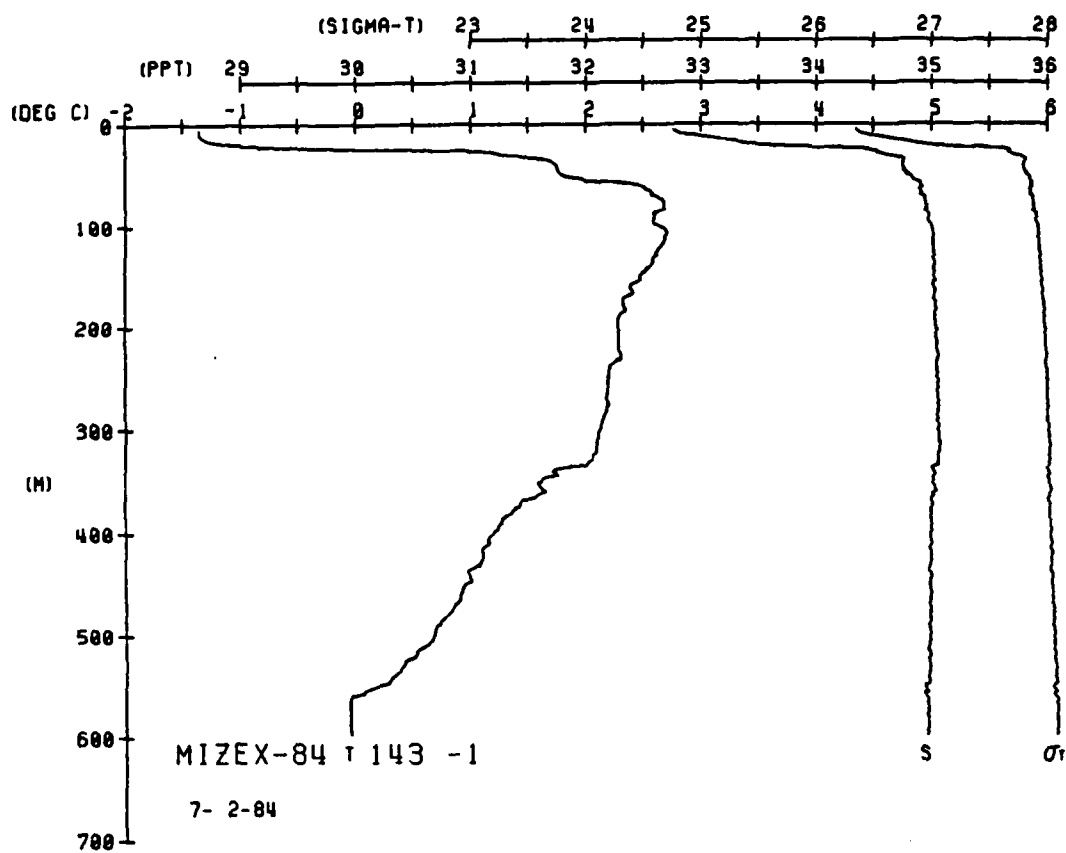
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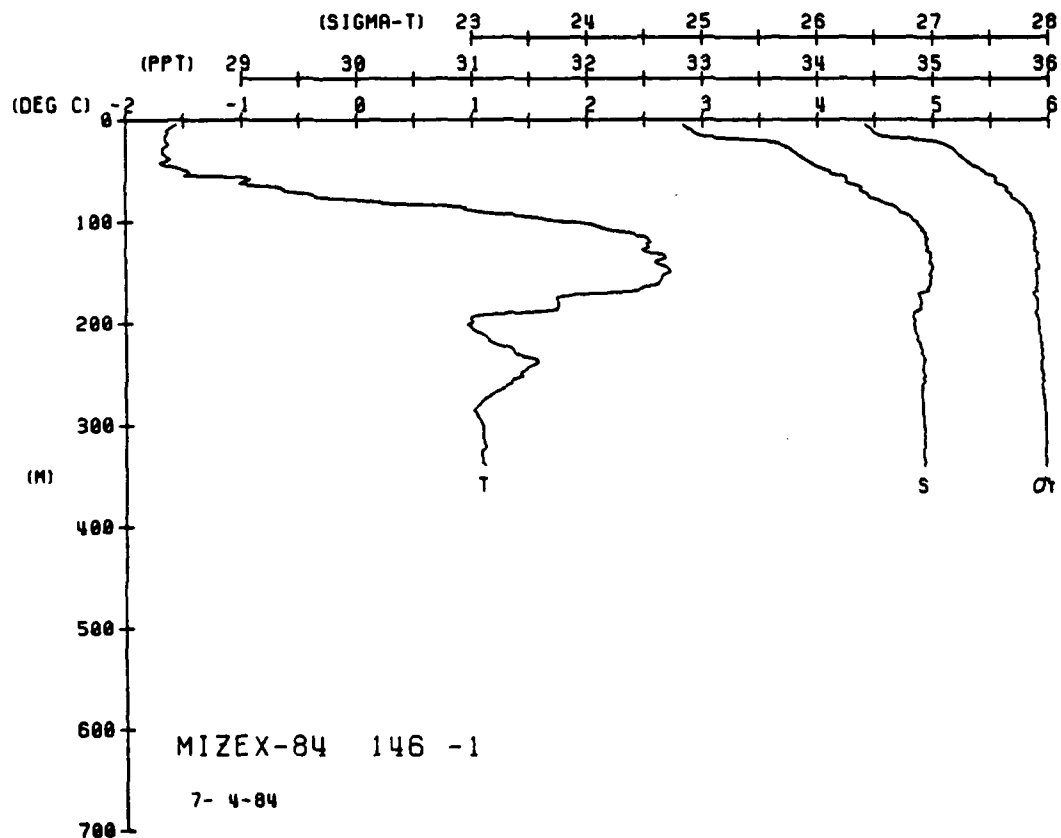
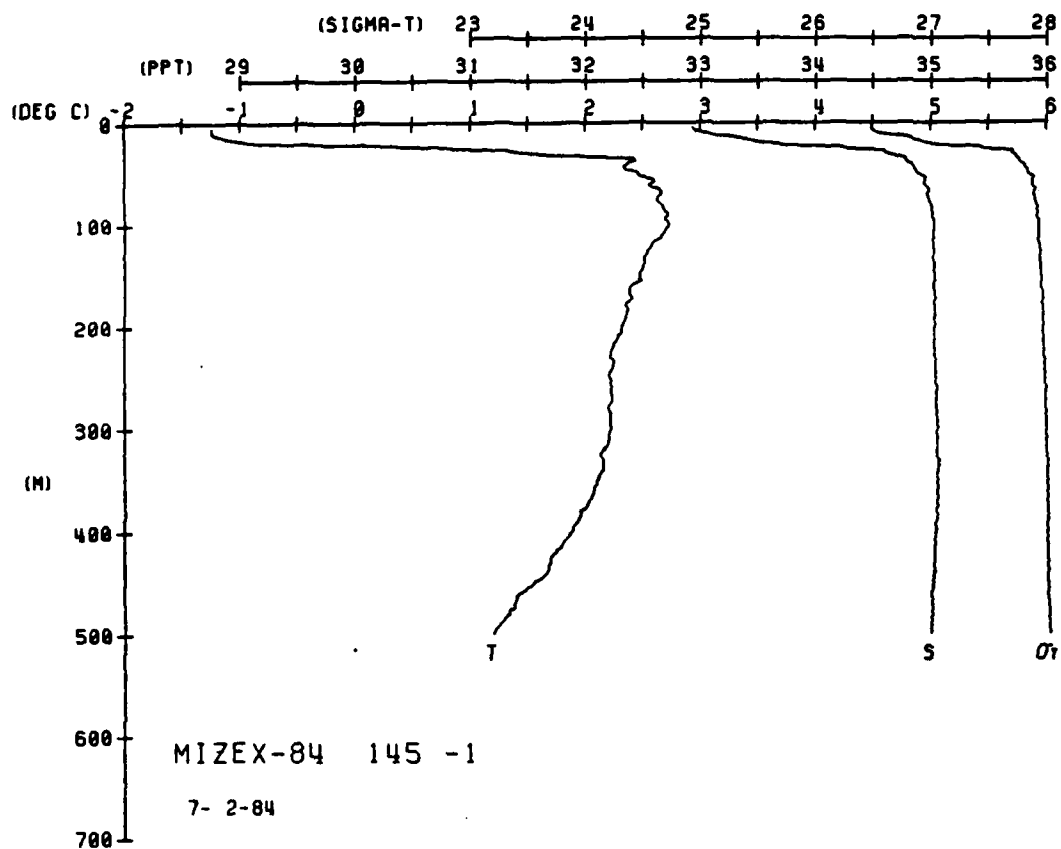




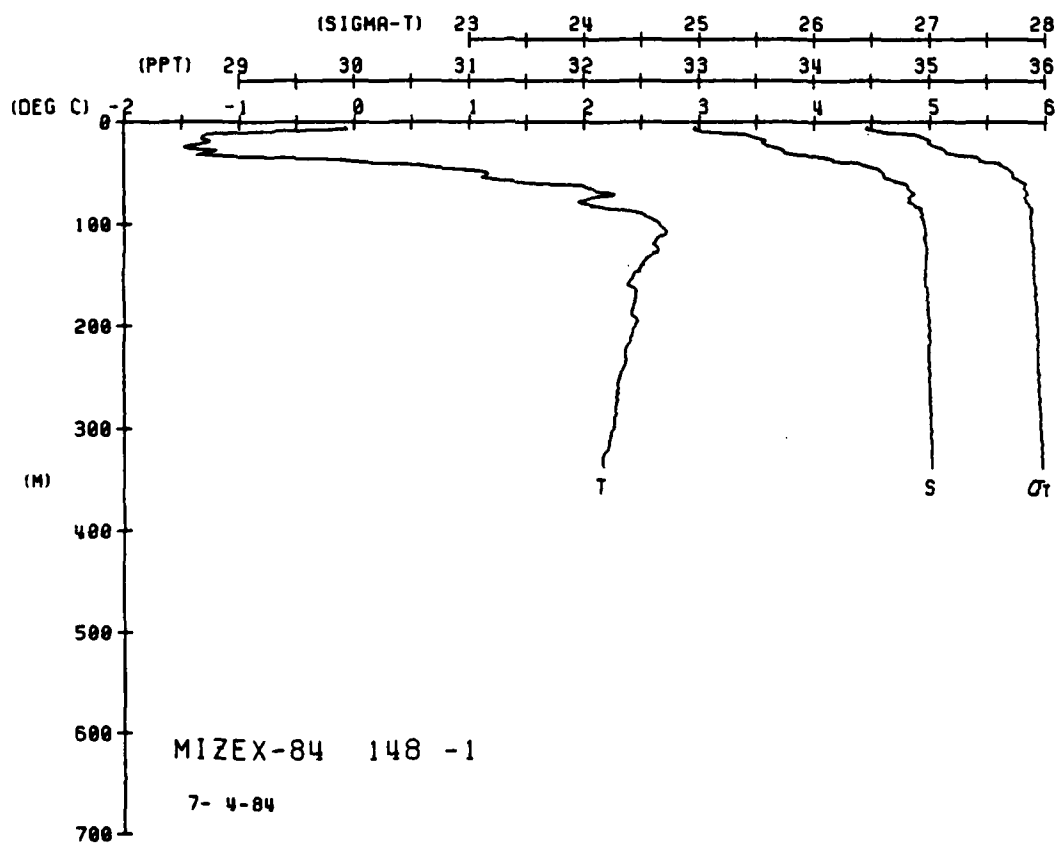
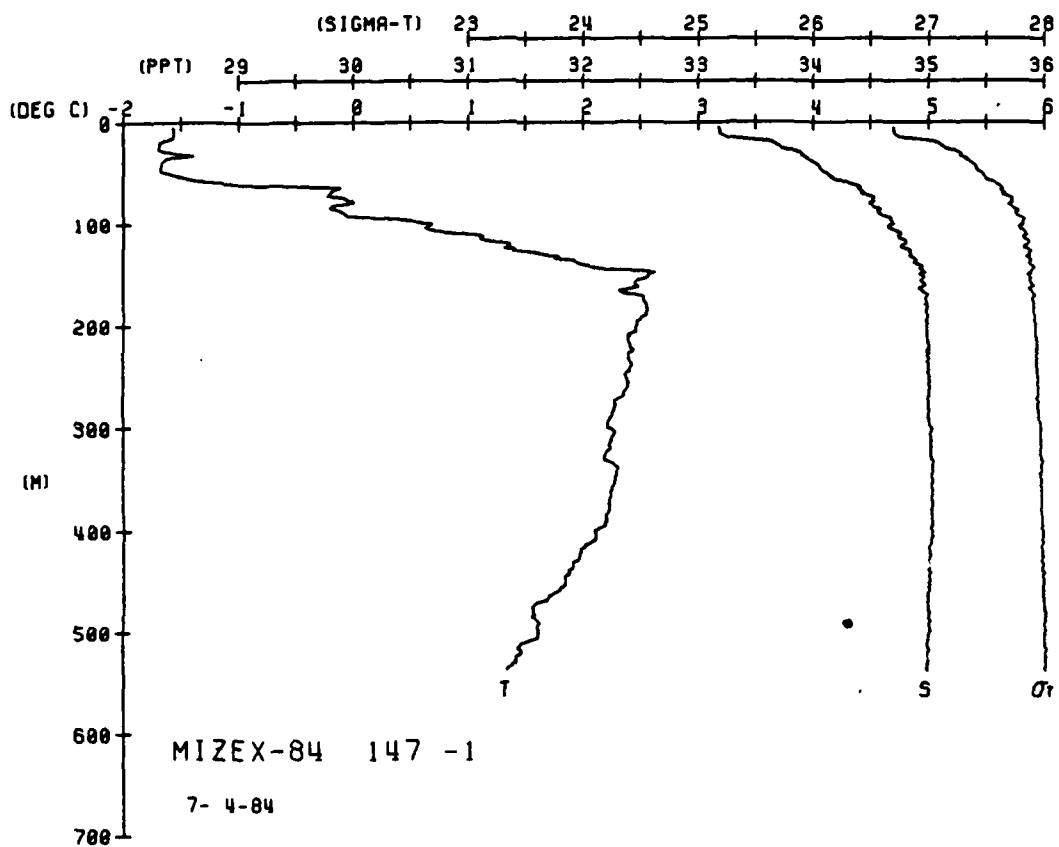
WIZEX-04 STATION 141(1) CTU 2/JUL/1984 1024 GMT CODE = 1
LAT = 00.5833N LNC = 5.5833E LTER = 150. LGR = 150.
WIND TEMP = 0.0 BARUM = 0.0 WIND = 0.0 SPEED = 0.0



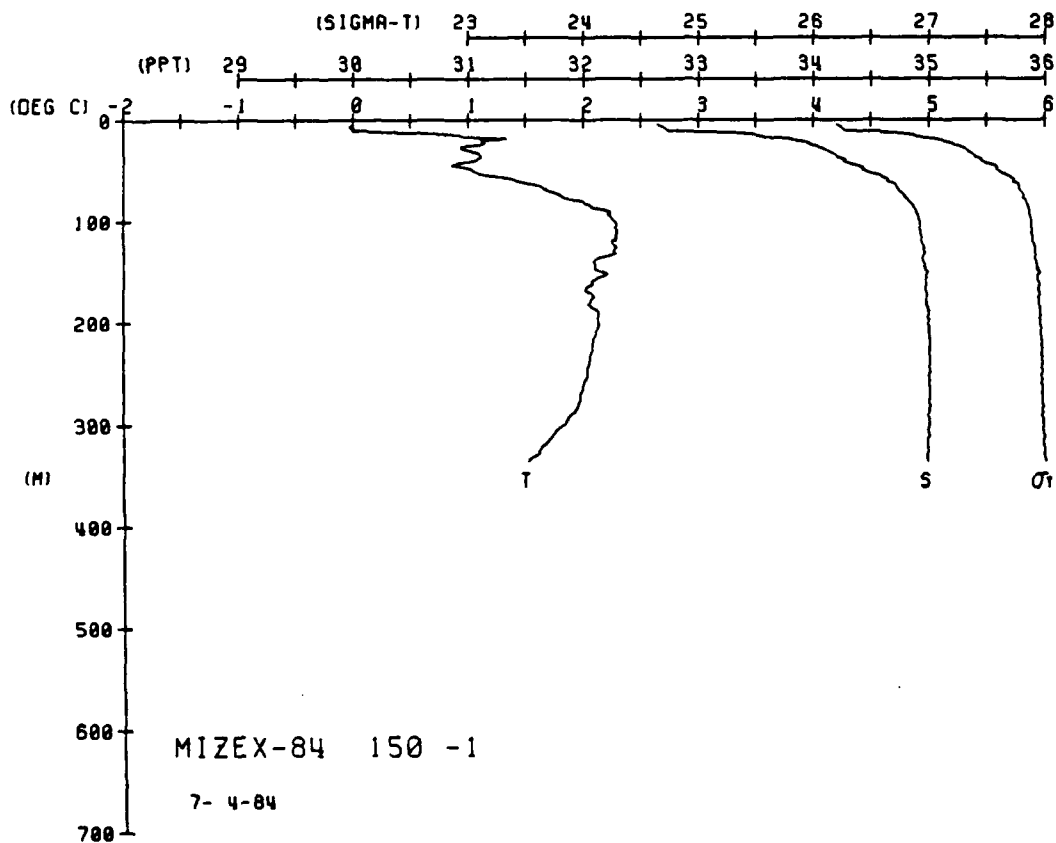
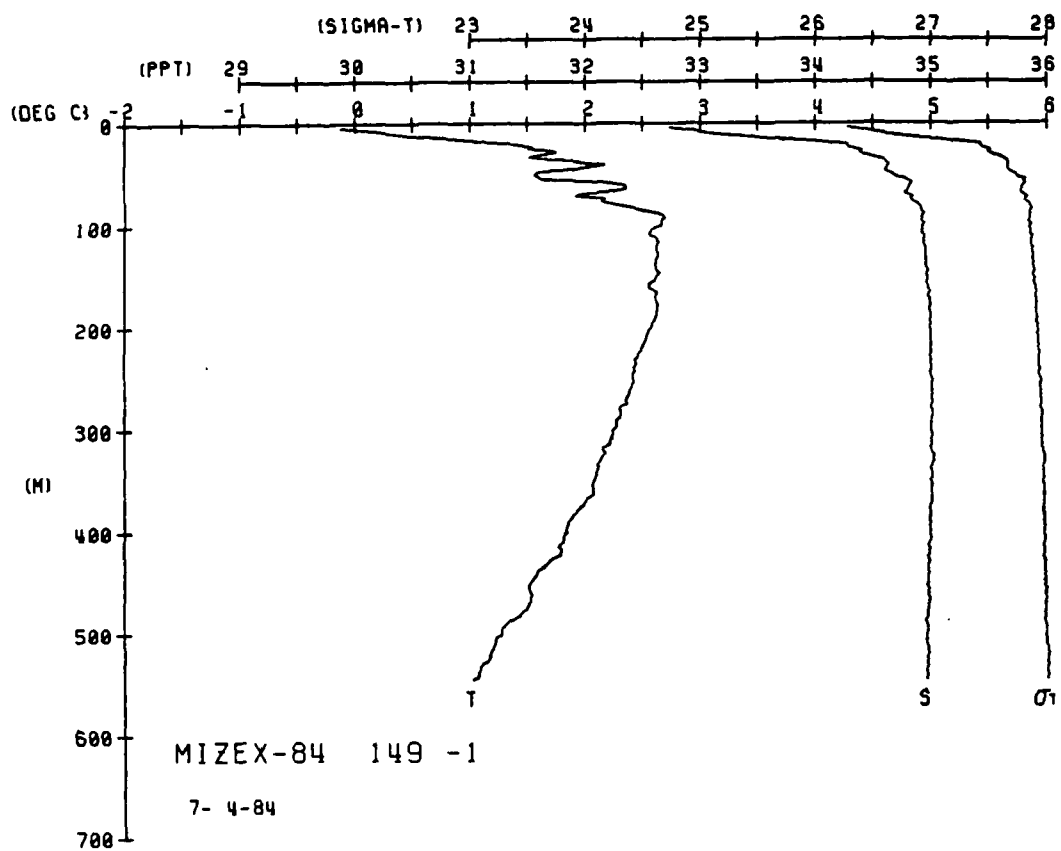




MIXEX-84 STATION 147(1) CTU 4/JUL/1984 940 GMT CODE = 1
 LAT = 30.3267N LNC = 1.6917E LTER = 300. LGER = 300.
 MIN TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0



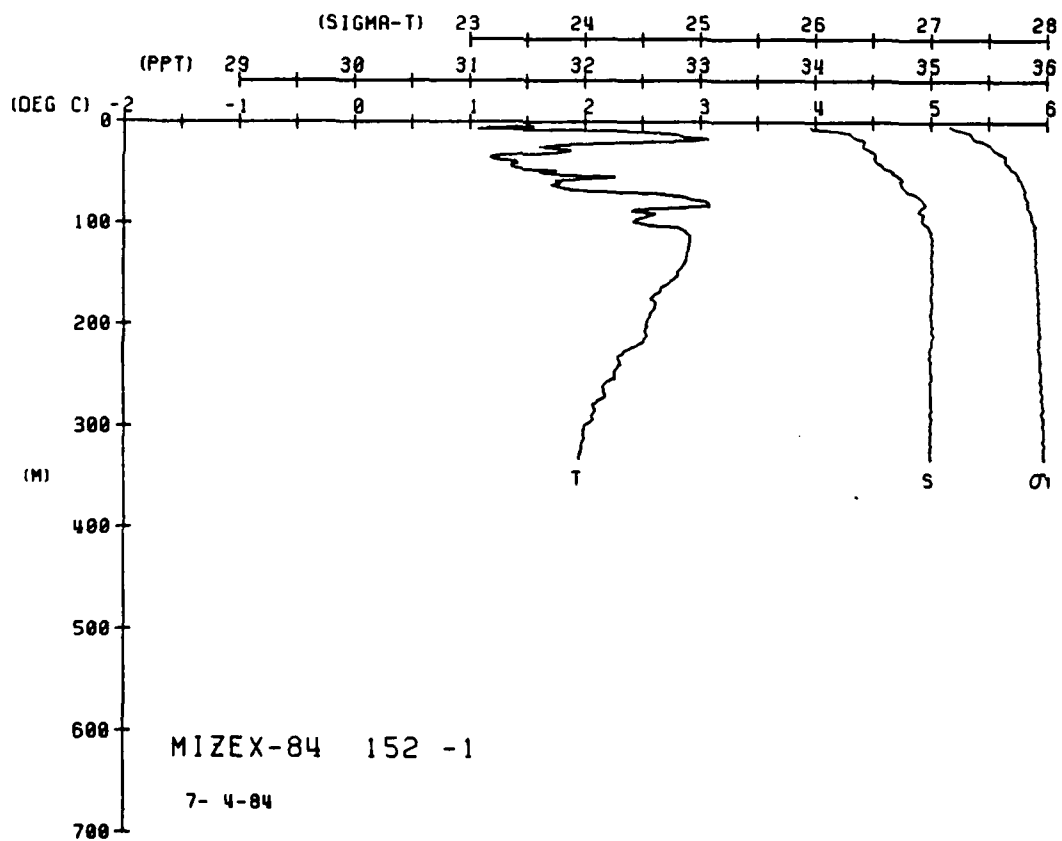
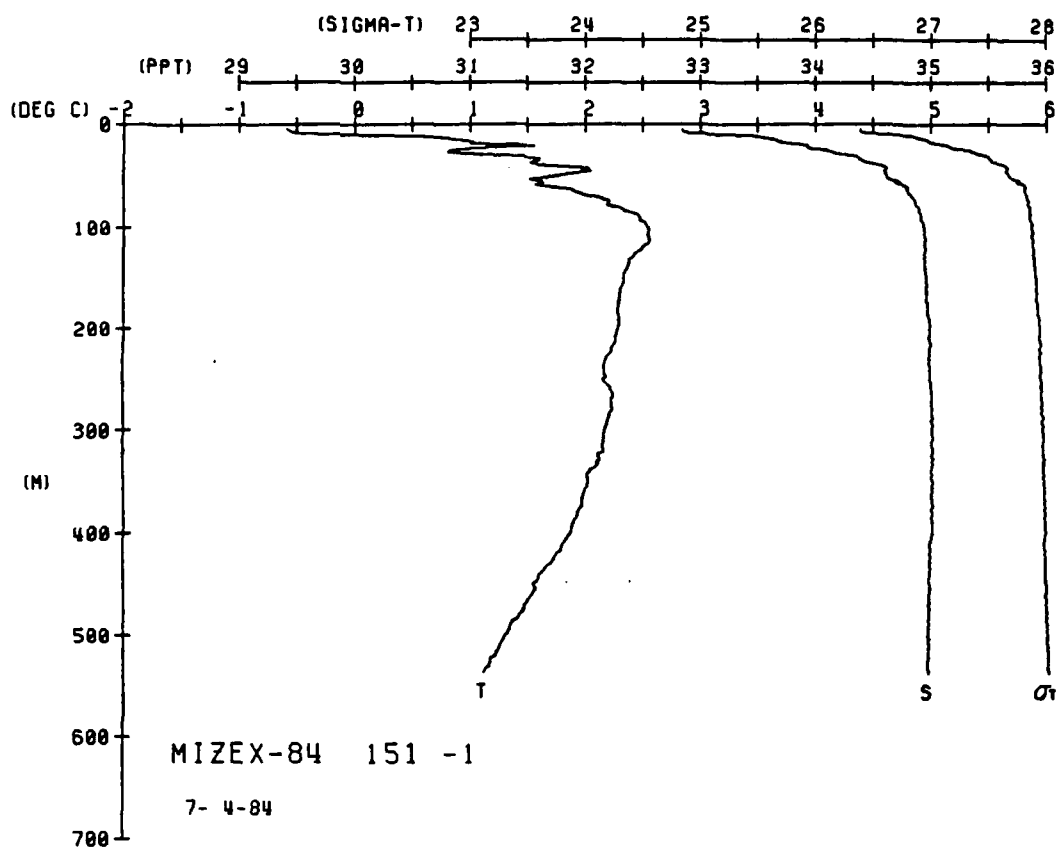
WIXEZ-04 STATION 149(1) CTU 4/JUL/1984 1059 GMT CODE = 1
LAT = 80.243N LNG = 2.5500E LTR = 300. LGR = 300.
AIR TEMP = 0.0 WIND = 0.0 WIND = 0.0 SPEED = 0.0



```

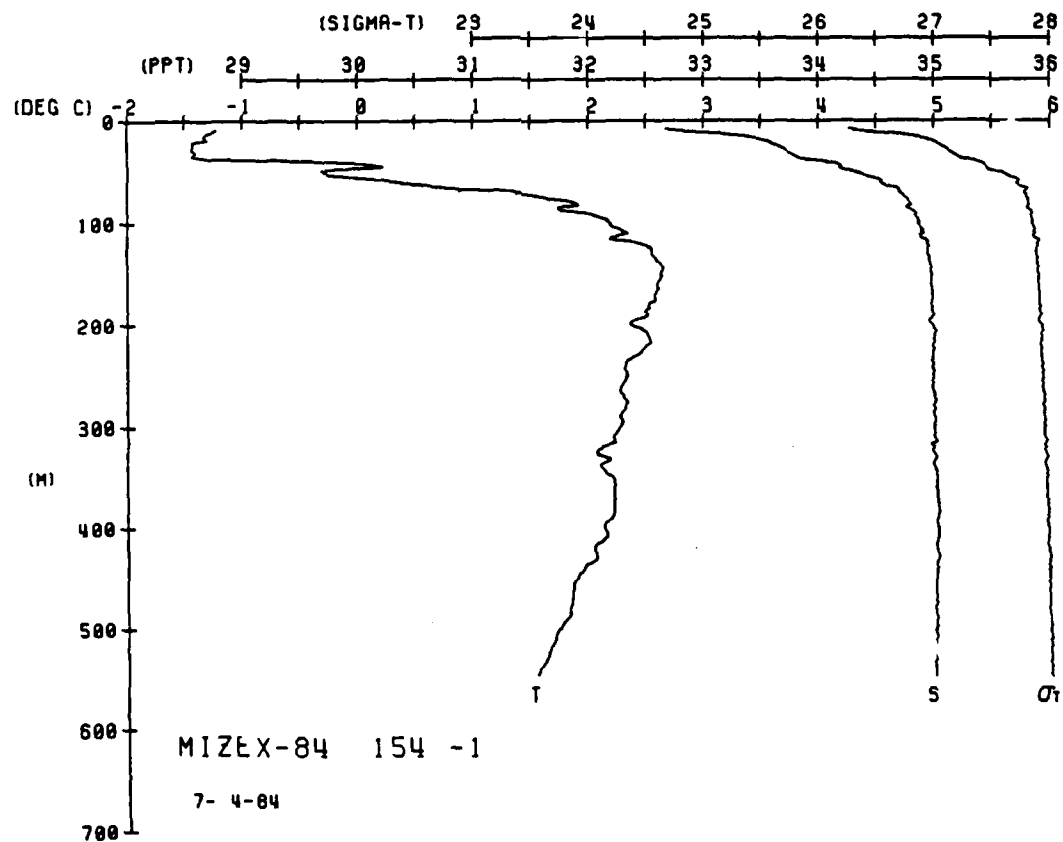
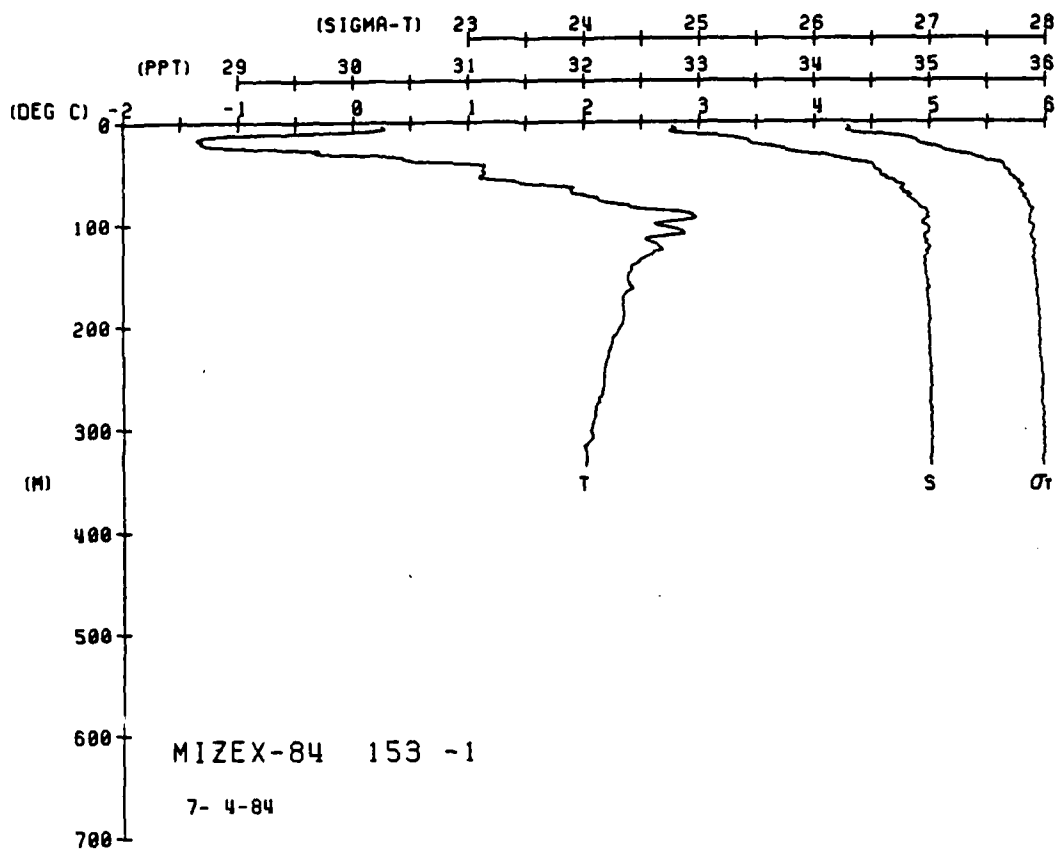
WIZEX-04 STATION 151(1) CTD 4/JUL/1984 1224 GMT CODE = 1
LAT = 80.1403N LNG = 3.2403E LTER = 300. LGEN = 300.
AIR TEMP = 0.0 SARUM = 0.0 WIND = 0.0 SPEED = 0.0

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WIXEX-84 STATION 154(1) CTU 4/JUL/1984 1334 WY4 CLOC = 1
LAT = 80.1983N LNC = 1.2000E LTER = 300. LGEN = 300.
AIR TEMP = 0.0 BARUM = 0.0 WIND = 0.0 SPEED = 0.0

[illegible][illegible]



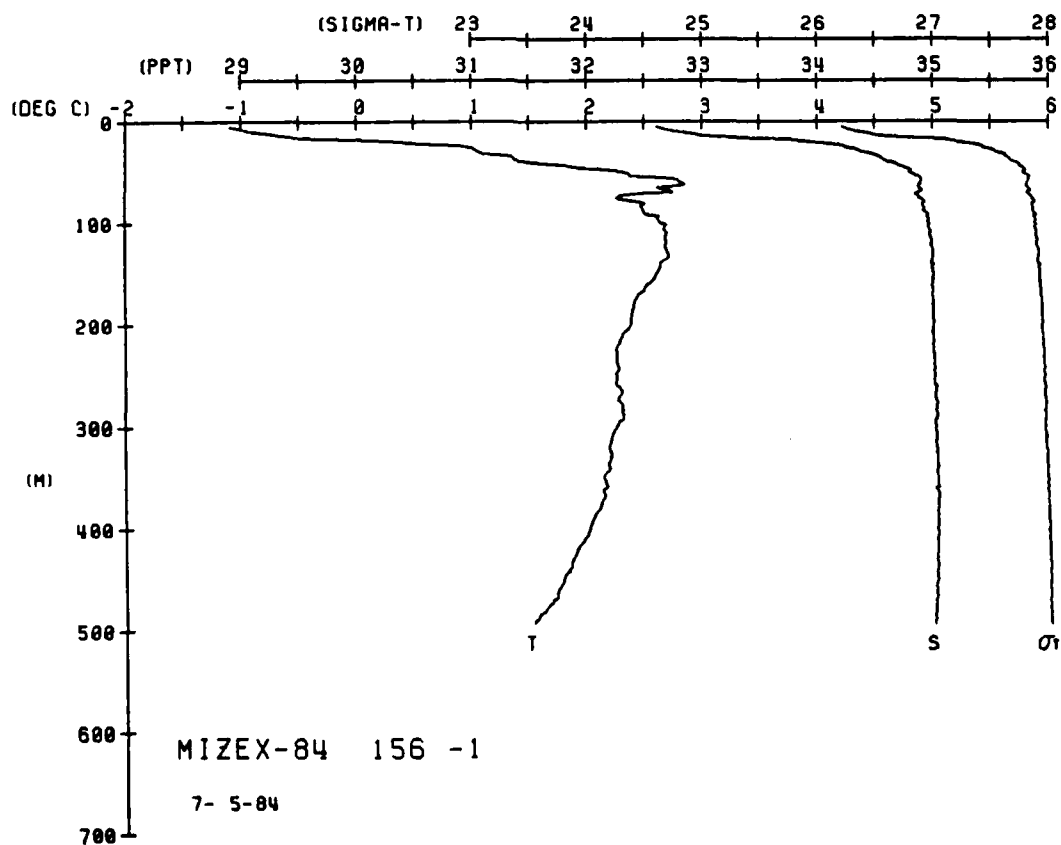
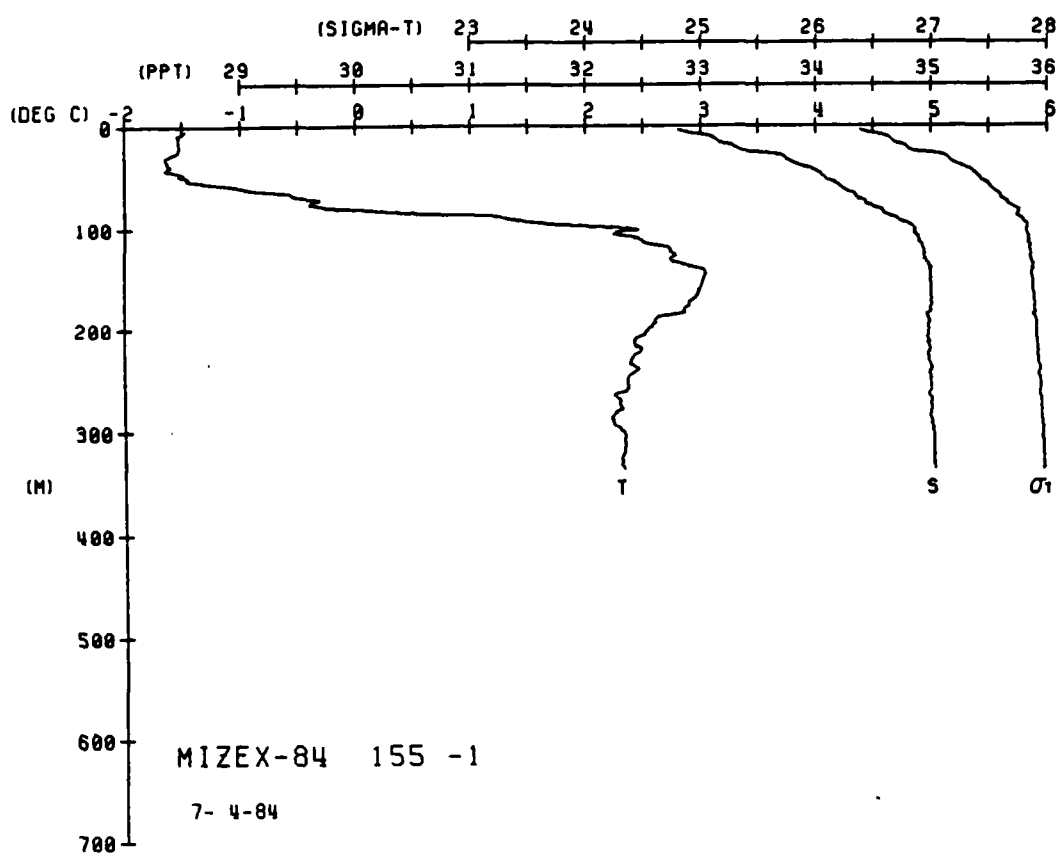
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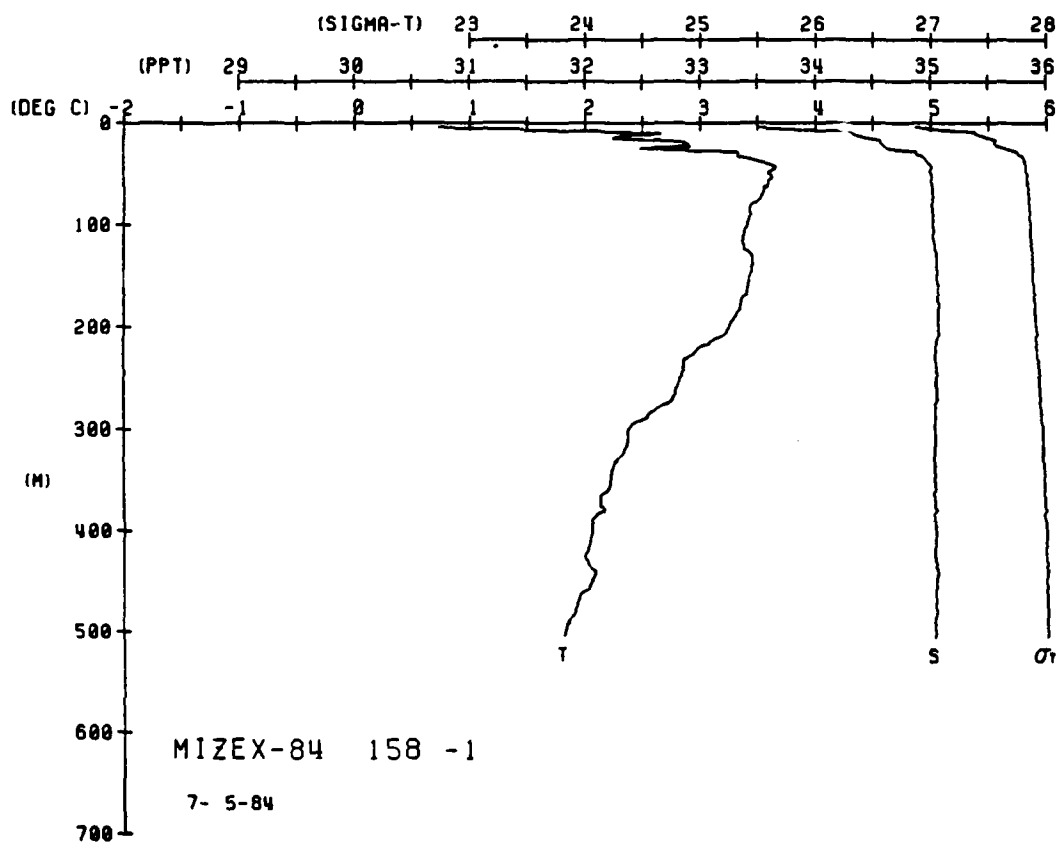
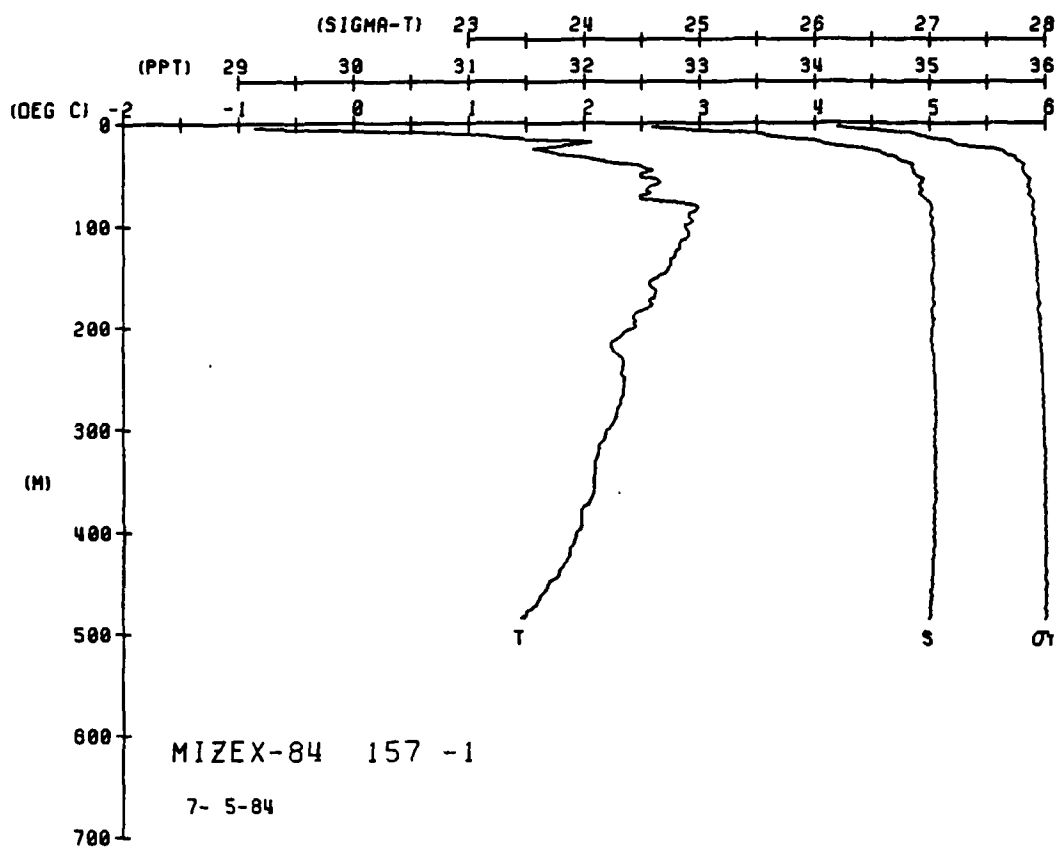
MIZET-84 STATION 156(1) CTD 5/JUL/1984 934 GMT CODE = 1
LAT = 80.4283N LNG = 4.3650E LTER = 300. LGEN = 300.
AIR TEMP = 0.0 WIND = 0.0 WIND = 0.0 SPEED = 0.0
BAHOM = 0.0 BAHOM = 0.0

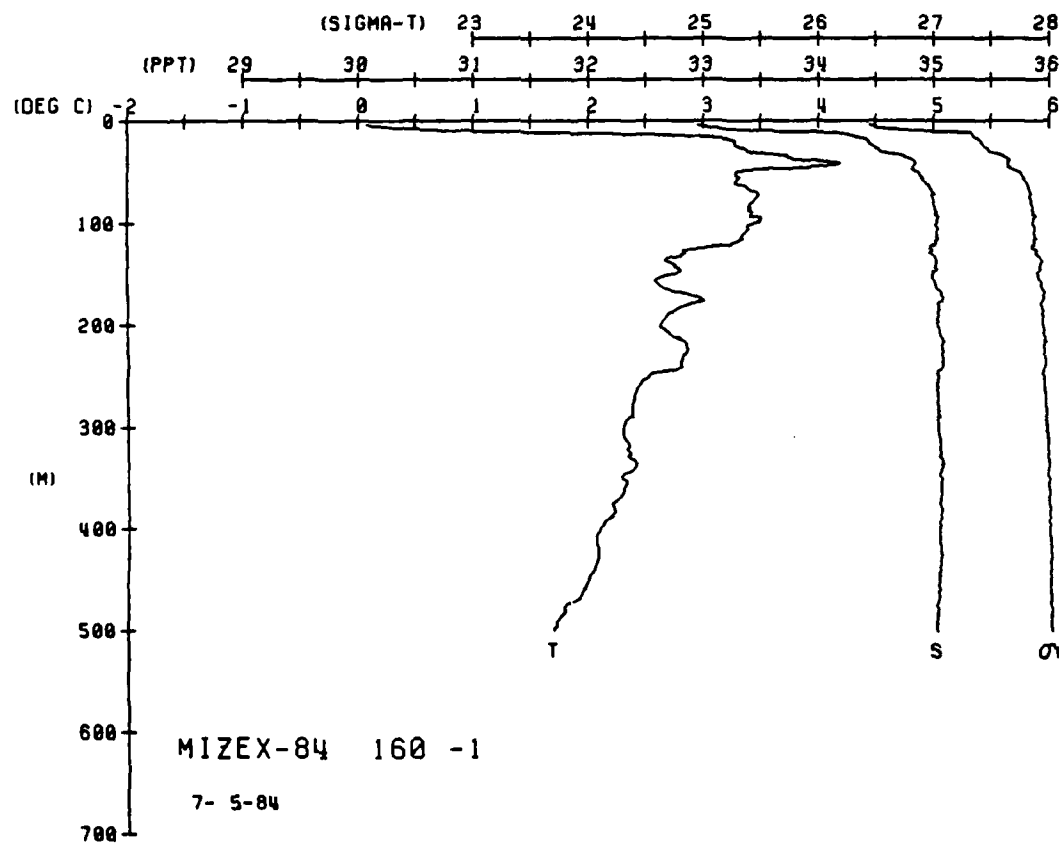
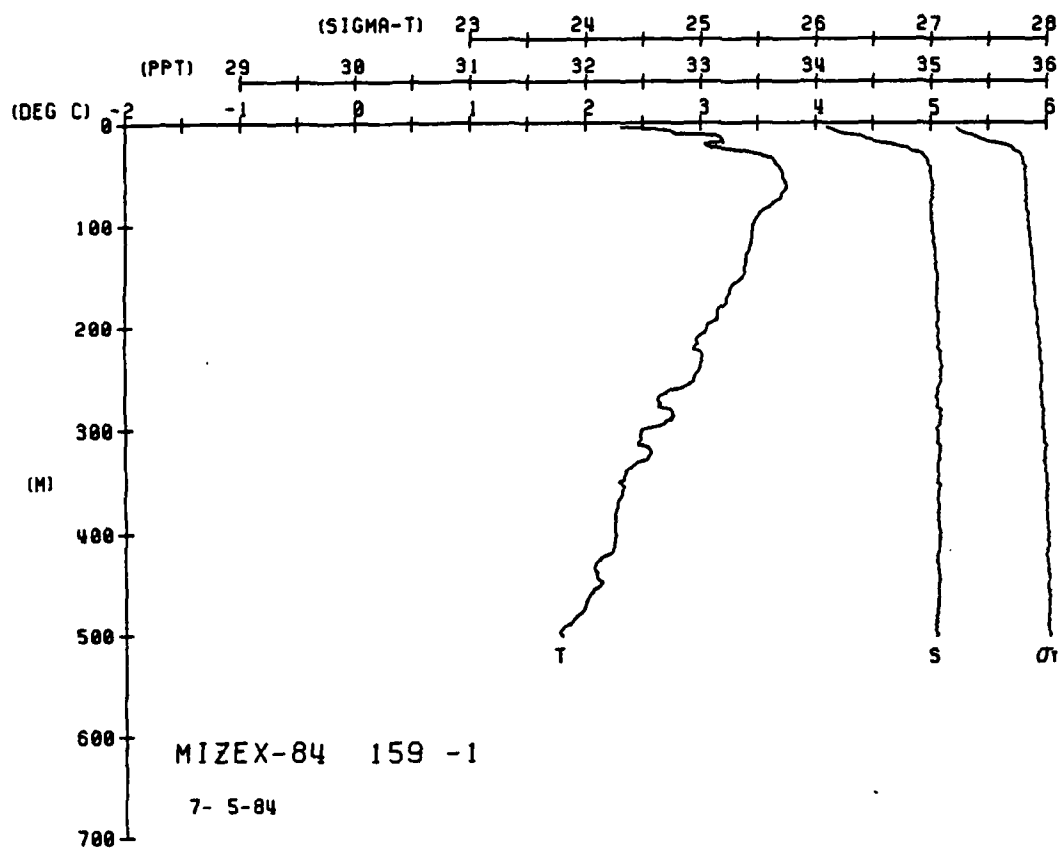
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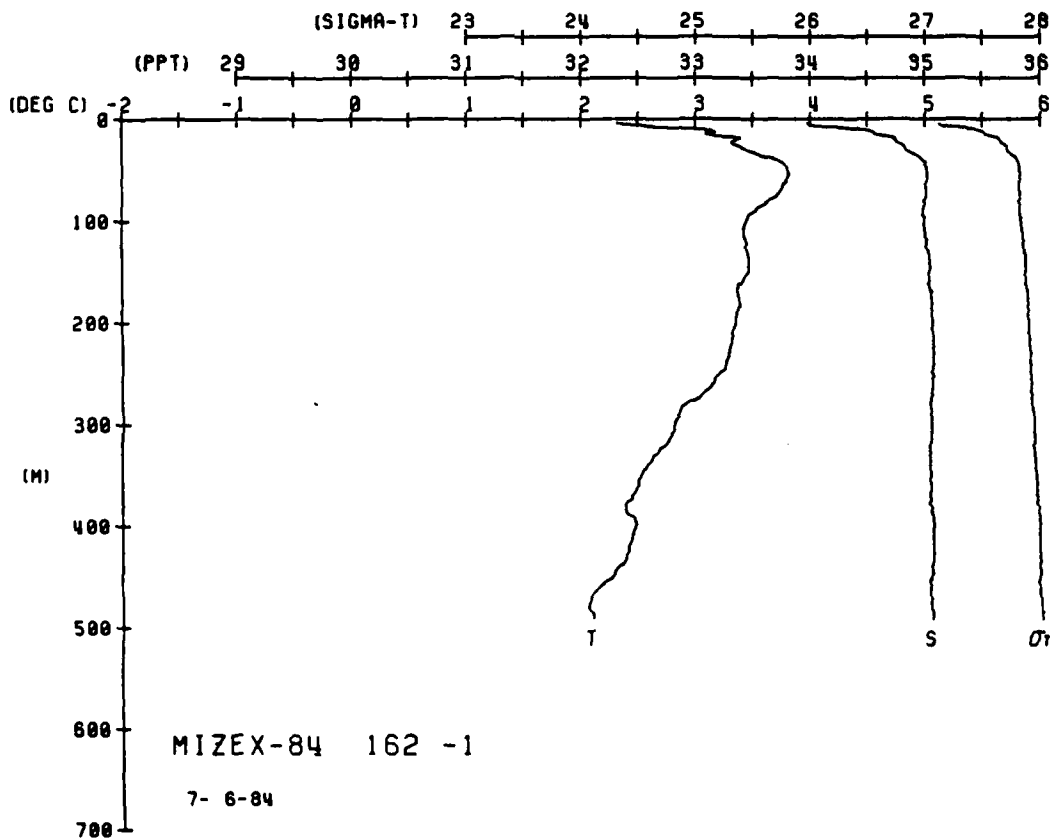
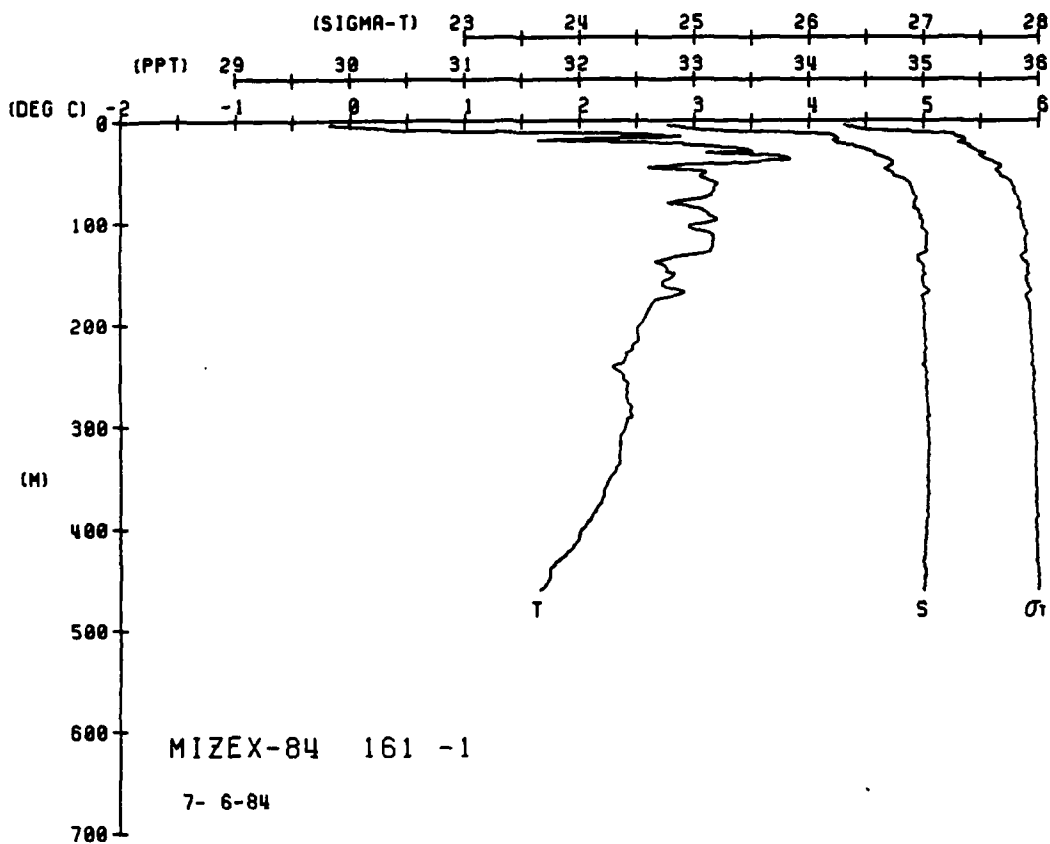
DEPTH	TEMP	PTEMP	SALIN	SIG T	SPVOL	DYMET	SOUND
00	17.1	17.1	35.2	1.020	0.000	0.000	0.000
01	17.2	17.2	35.3	1.021	0.000	0.000	0.000
02	17.3	17.3	35.4	1.022	0.000	0.000	0.000
03	17.4	17.4	35.5	1.023	0.000	0.000	0.000
04	17.5	17.5	35.6	1.024	0.000	0.000	0.000
05	17.6	17.6	35.7	1.025	0.000	0.000	0.000
06	17.7	17.7	35.8	1.026	0.000	0.000	0.000
07	17.8	17.8	35.9	1.027	0.000	0.000	0.000
08	17.9	17.9	36.0	1.028	0.000	0.000	0.000
09	18.0	18.0	36.1	1.029	0.000	0.000	0.000
10	18.1	18.1	36.2	1.030	0.000	0.000	0.000
11	18.2	18.2	36.3	1.031	0.000	0.000	0.000
12	18.3	18.3	36.4	1.032	0.000	0.000	0.000
13	18.4	18.4	36.5	1.033	0.000	0.000	0.000
14	18.5	18.5	36.6	1.034	0.000	0.000	0.000
15	18.6	18.6	36.7	1.035	0.000	0.000	0.000
16	18.7	18.7	36.8	1.036	0.000	0.000	0.000
17	18.8	18.8	36.9	1.037	0.000	0.000	0.000
18	18.9	18.9	37.0	1.038	0.000	0.000	0.000
19	19.0	19.0	37.1	1.039	0.000	0.000	0.000
20	19.1	19.1	37.2	1.040	0.000	0.000	0.000
21	19.2	19.2	37.3	1.041	0.000	0.000	0.000
22	19.3	19.3	37.4	1.042	0.000	0.000	0.000
23	19.4	19.4	37.5	1.043	0.000	0.000	0.000
24	19.5	19.5	37.6	1.044	0.000	0.000	0.000
25	19.6	19.6	37.7	1.045	0.000	0.000	0.000
26	19.7	19.7	37.8	1.046	0.000	0.000	0.000
27	19.8	19.8	37.9	1.047	0.000	0.000	0.000
28	19.9	19.9	38.0	1.048	0.000	0.000	0.000
29	20.0	20.0	38.1	1.049	0.000	0.000	0.000
30	20.1	20.1	38.2	1.050	0.000	0.000	0.000
31	20.2	20.2	38.3	1.051	0.000	0.000	0.000
32	20.3	20.3	38.4	1.052	0.000	0.000	0.000
33	20.4	20.4	38.5	1.053	0.000	0.000	0.000
34	20.5	20.5	38.6	1.054	0.000	0.000	0.000
35	20.6	20.6	38.7	1.055	0.000	0.000	0.000
36	20.7	20.7	38.8	1.056	0.000	0.000	0.000
37	20.8	20.8	38.9	1.057	0.000	0.000	0.000
38	20.9	20.9	39.0	1.058	0.000	0.000	0.000
39	21.0	21.0	39.1	1.059	0.000	0.000	0.000
40	21.1	21.1	39.2	1.060	0.000	0.000	0.000
41	21.2	21.2	39.3	1.061	0.000	0.000	0.000
42	21.3	21.3	39.4	1.062	0.000	0.000	0.000
43	21.4	21.4	39.5	1.063	0.000	0.000	0.000
44	21.5	21.5	39.6	1.064	0.000	0.000	0.000
45</							

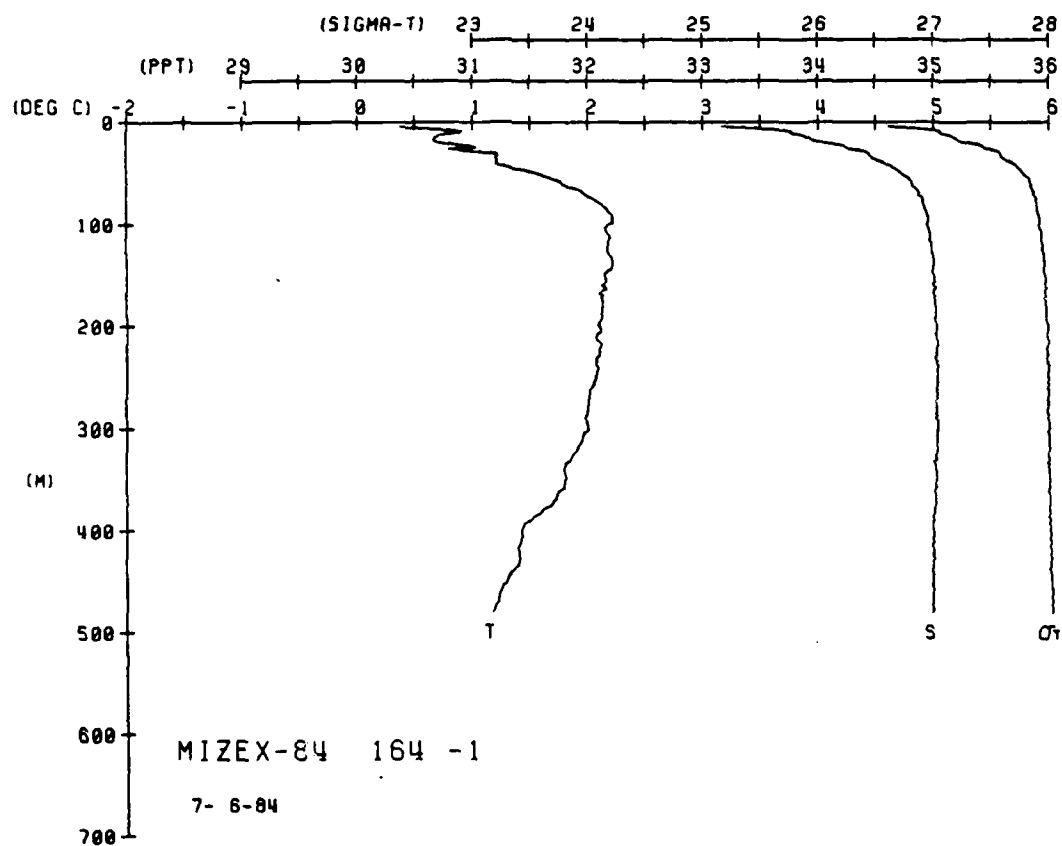
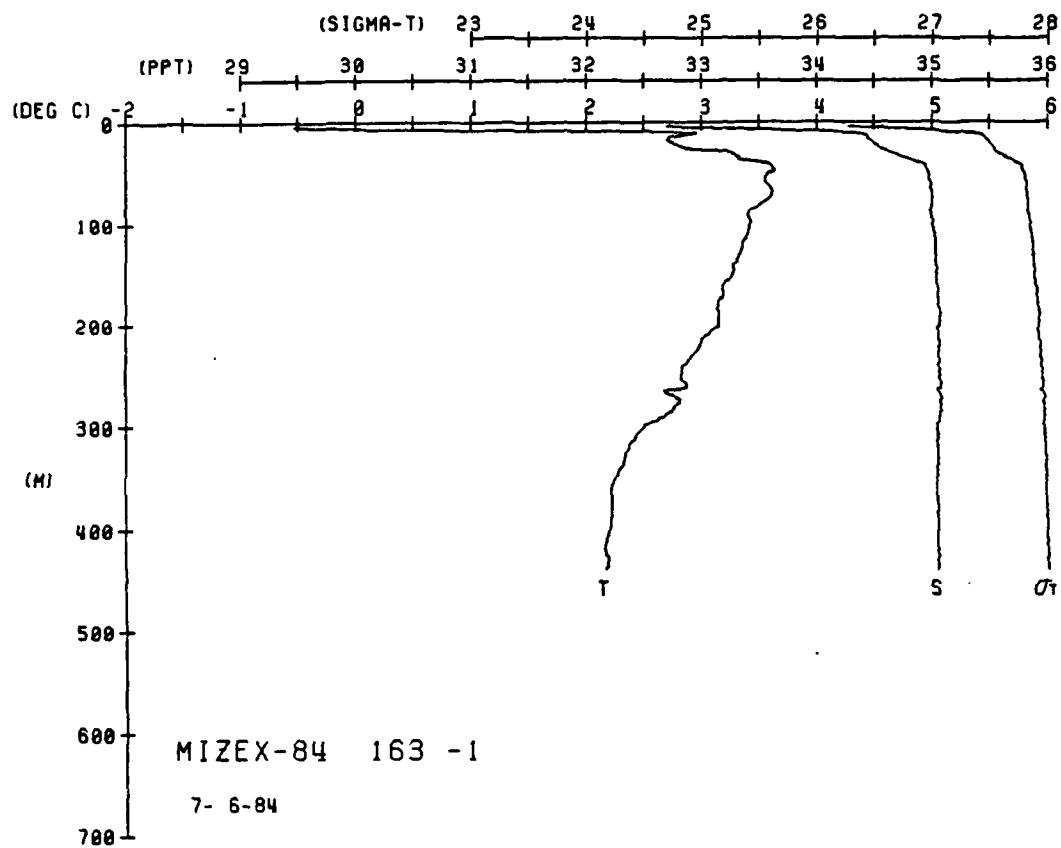
[illegible]











AD-A163 096

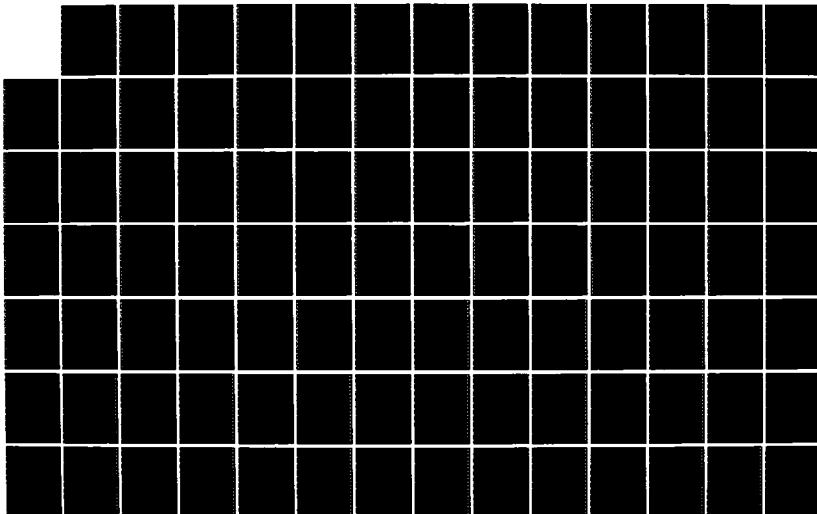
MARGINAL ICE ZONE EXPERIMENT - 1984 PHYSICAL
OCEANOGRAPHY REPORT: USNS LY. (U) LAMONT-DOHERTY
GEOLOGICAL OBSERVATORY PALISADES NY T O HANLEY DEC 85
LDGO-85-7 N00014-84-C-0132

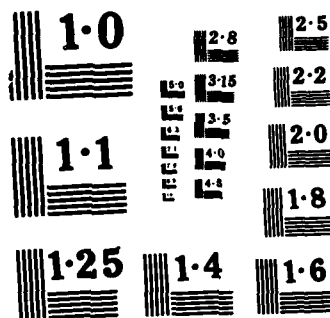
3/4

UNCLASSIFIED

F/G 8/10

NL



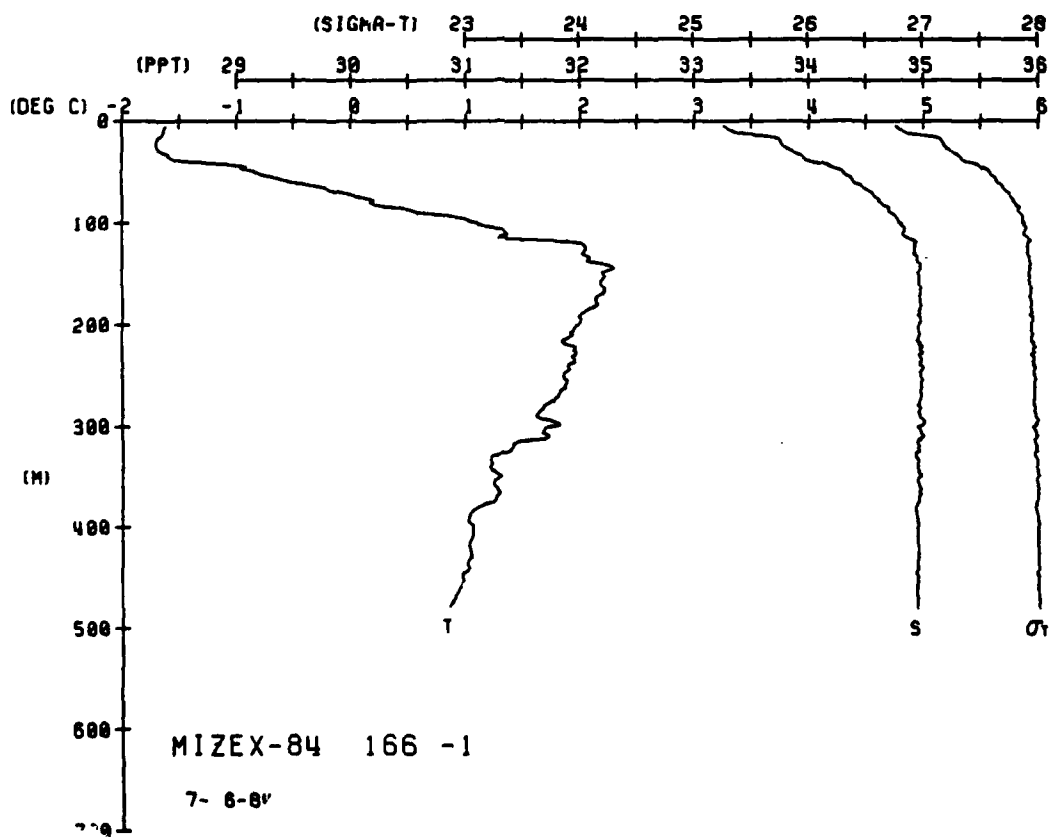
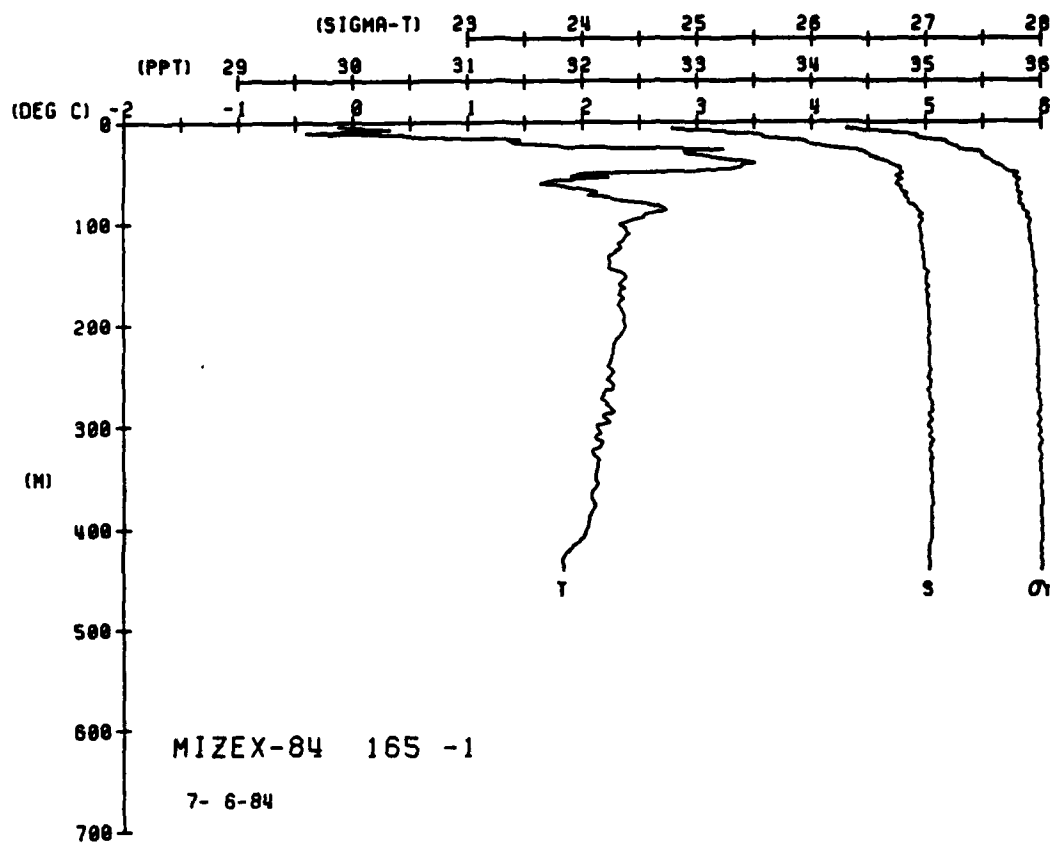


NATIONAL BUREAU OF STANDARDS
MICROCOPY RESOLUTION TEST CHART

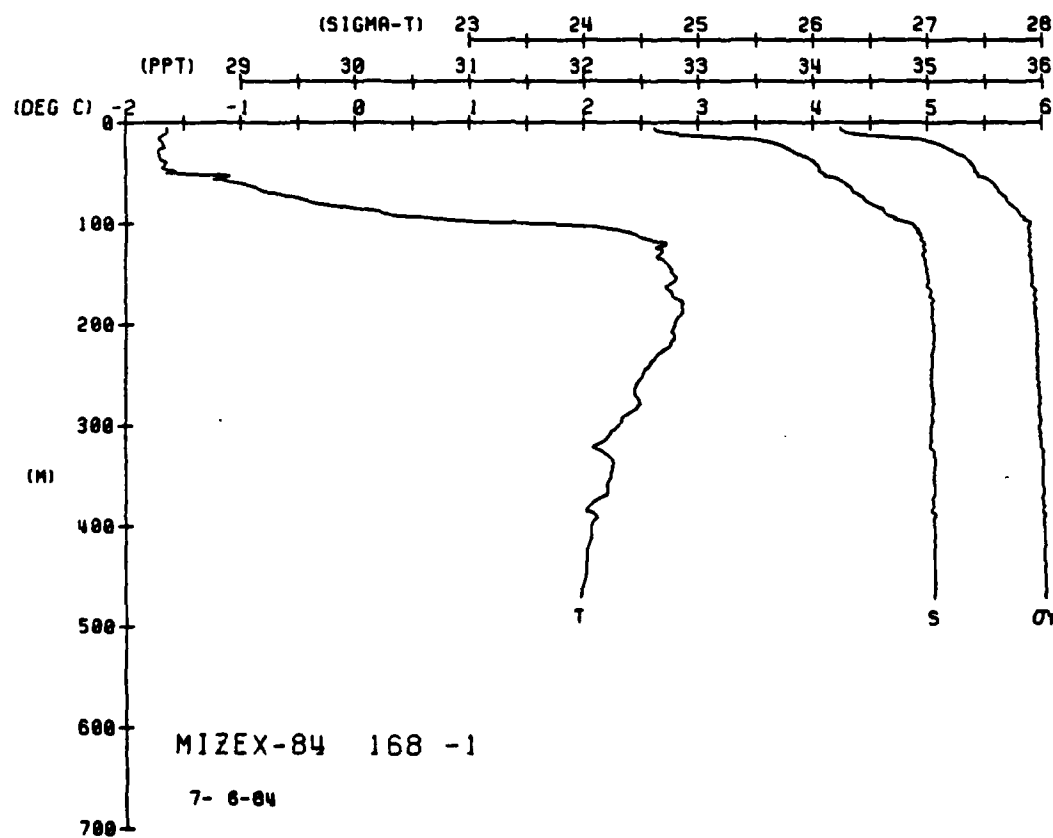
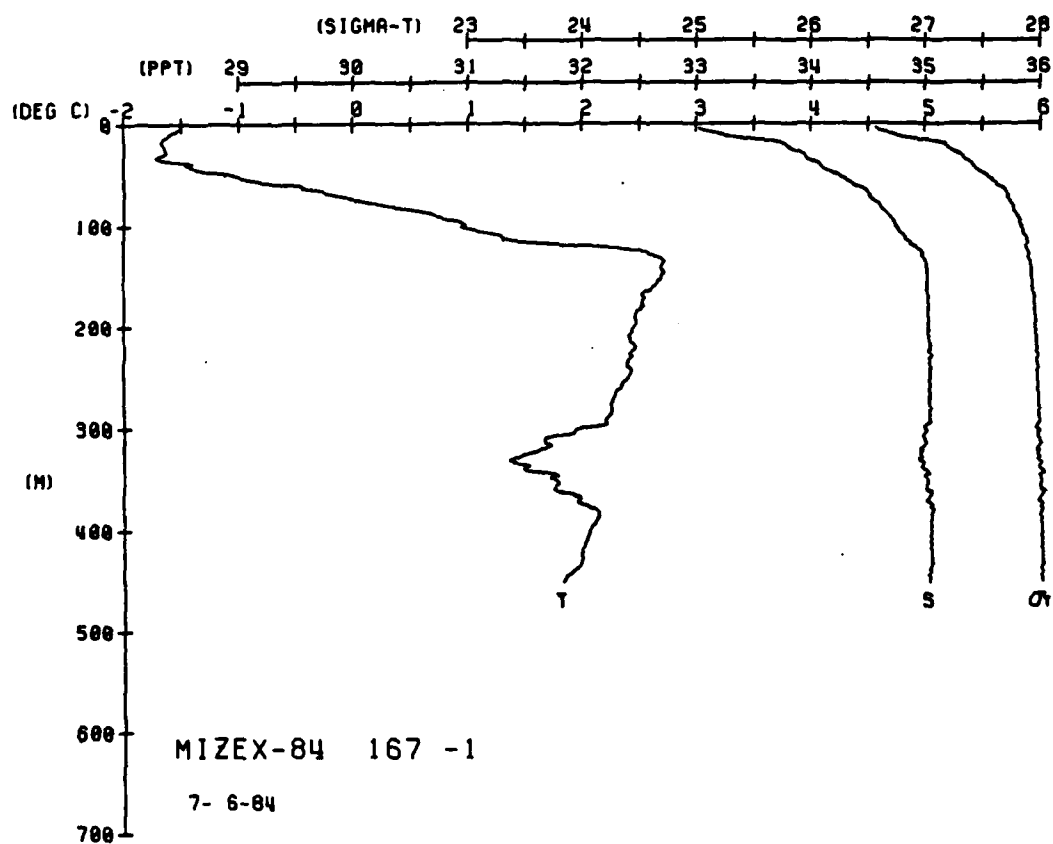
MIXEX-04 STATION 165(1) CTD 6/JUL/1984 1302 GMT CODE = 1
 LAT = 00.3167N LNC = 2.5033E LTER = 150. LGER = 150.
 AIR TEMP. = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

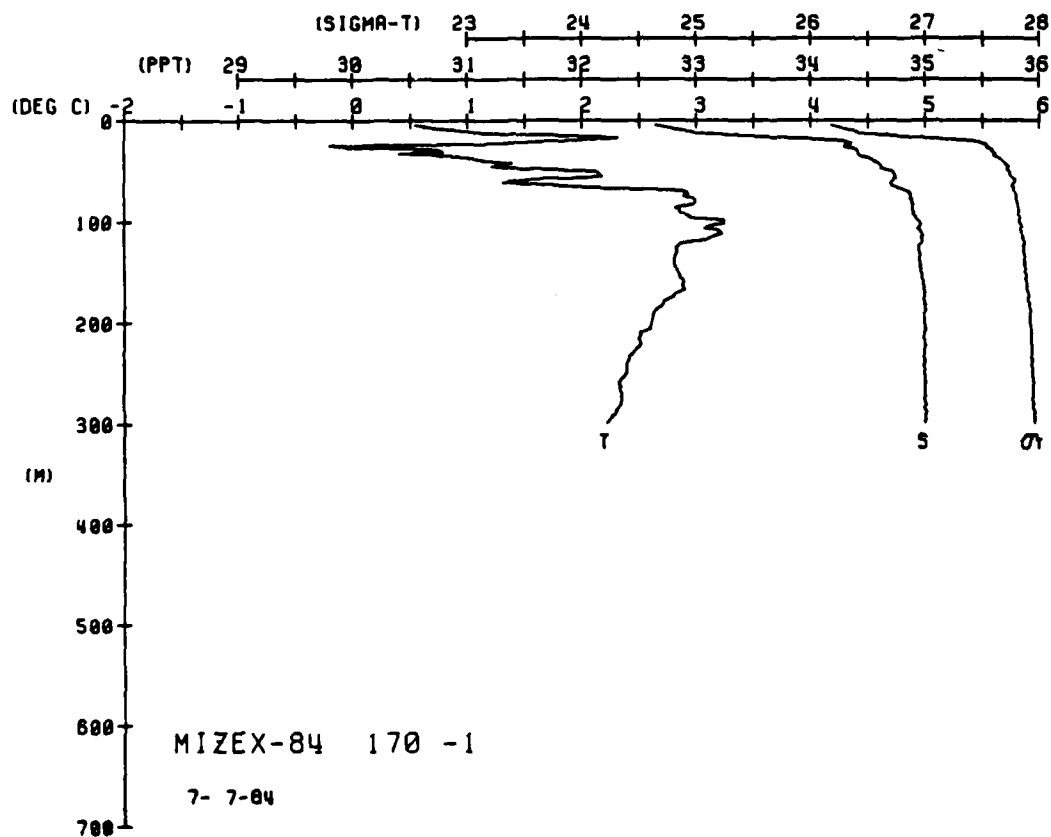
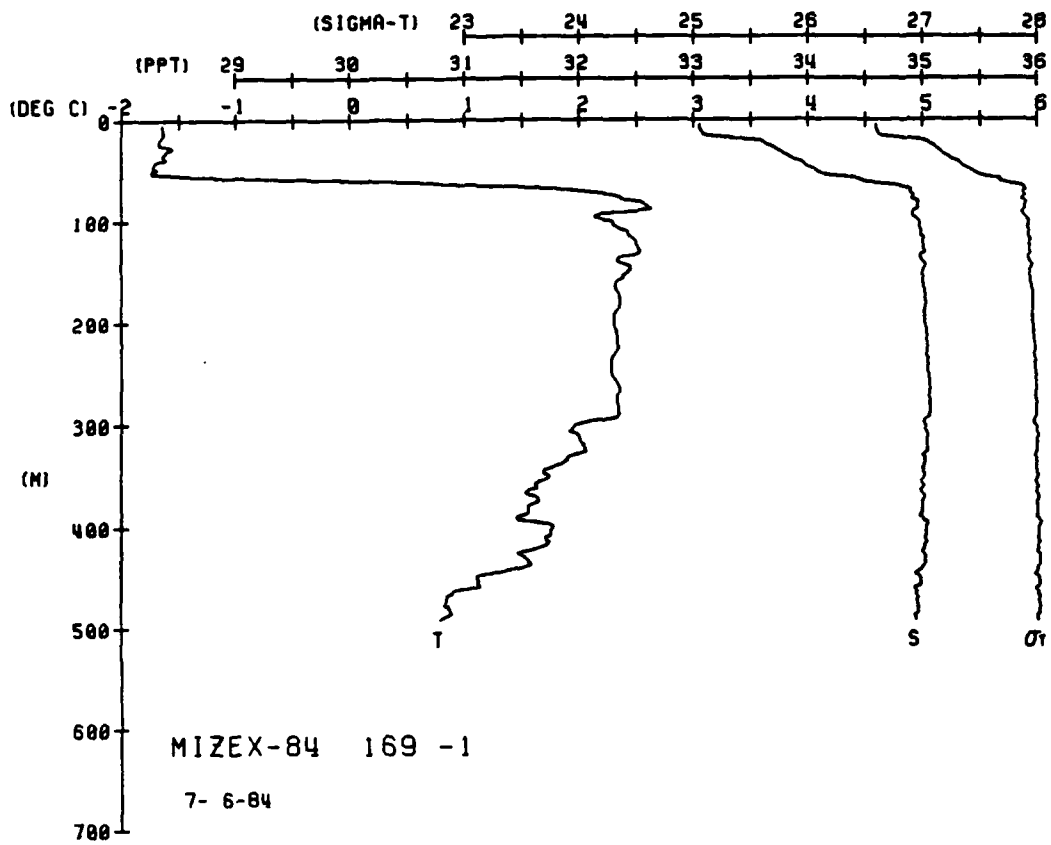
DEATH TEND PLEAS SALIN SIG T EDVNI. DYMHT SOUND

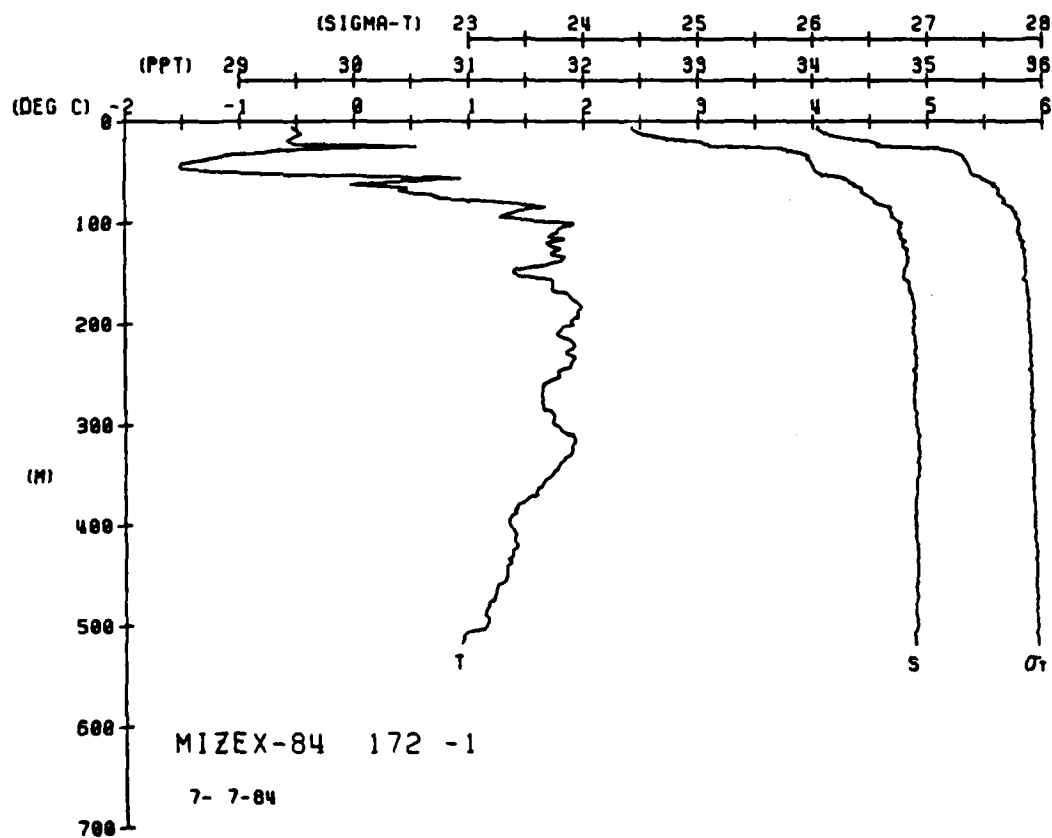
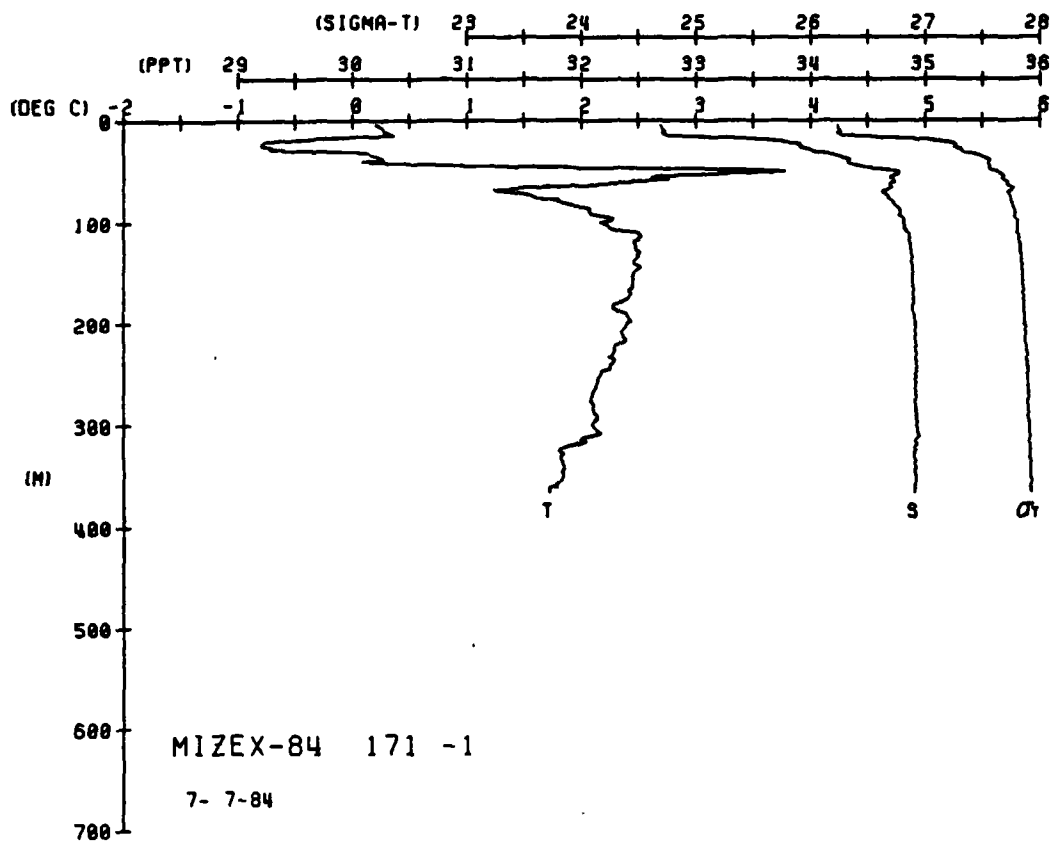
[illegible]

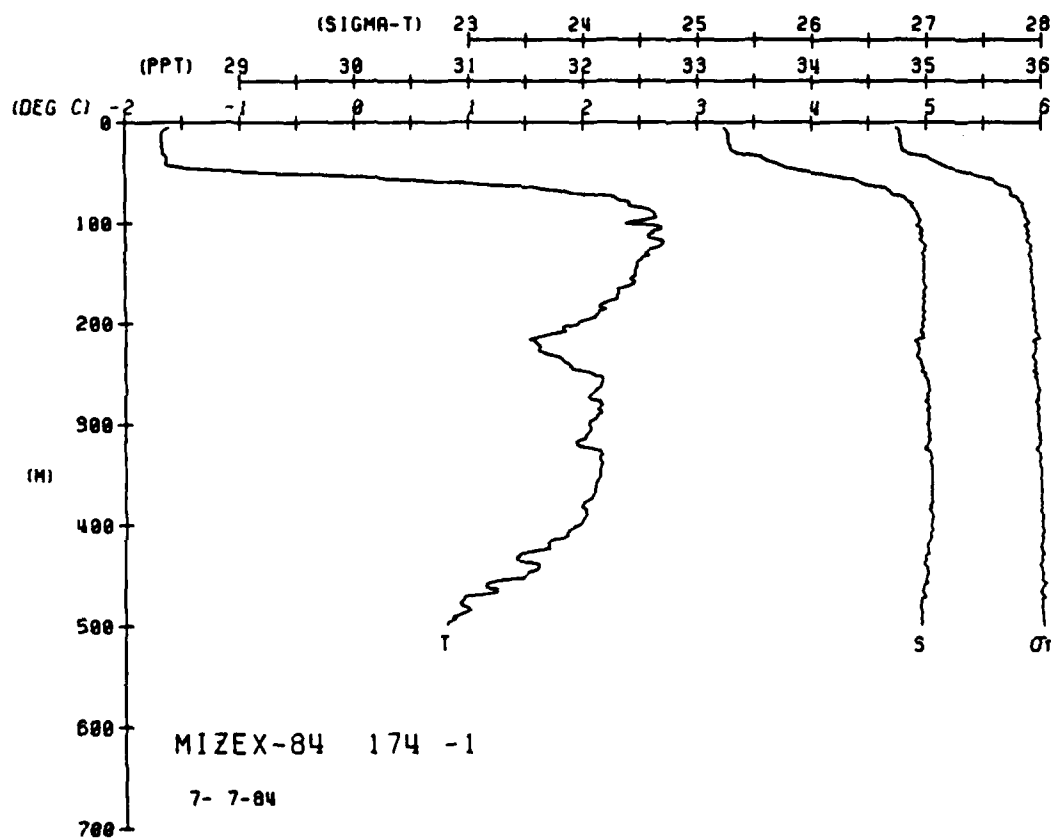
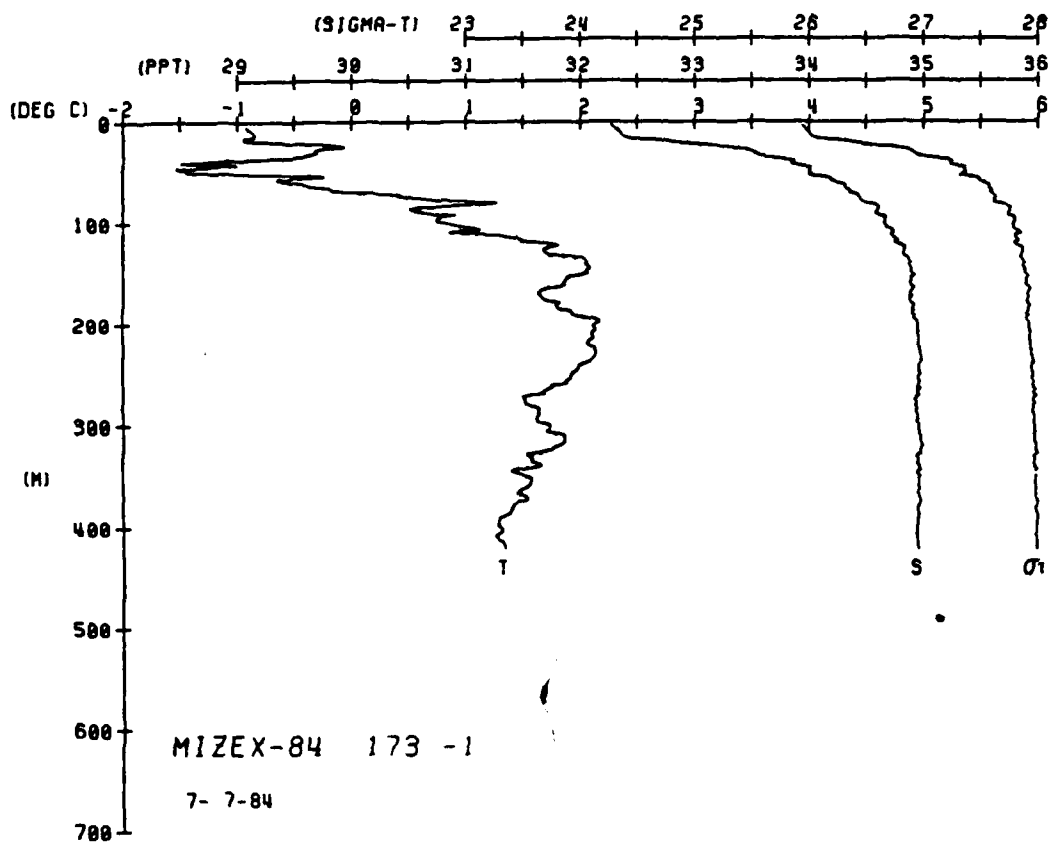


[illegible][illegible]







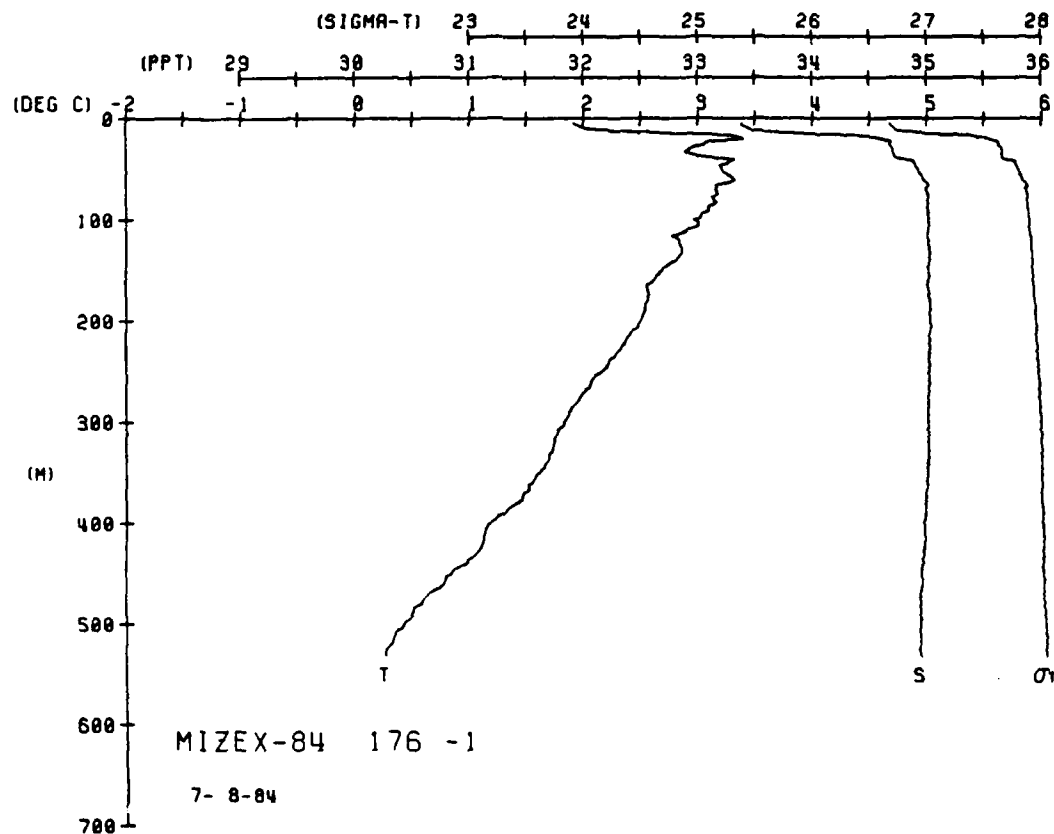
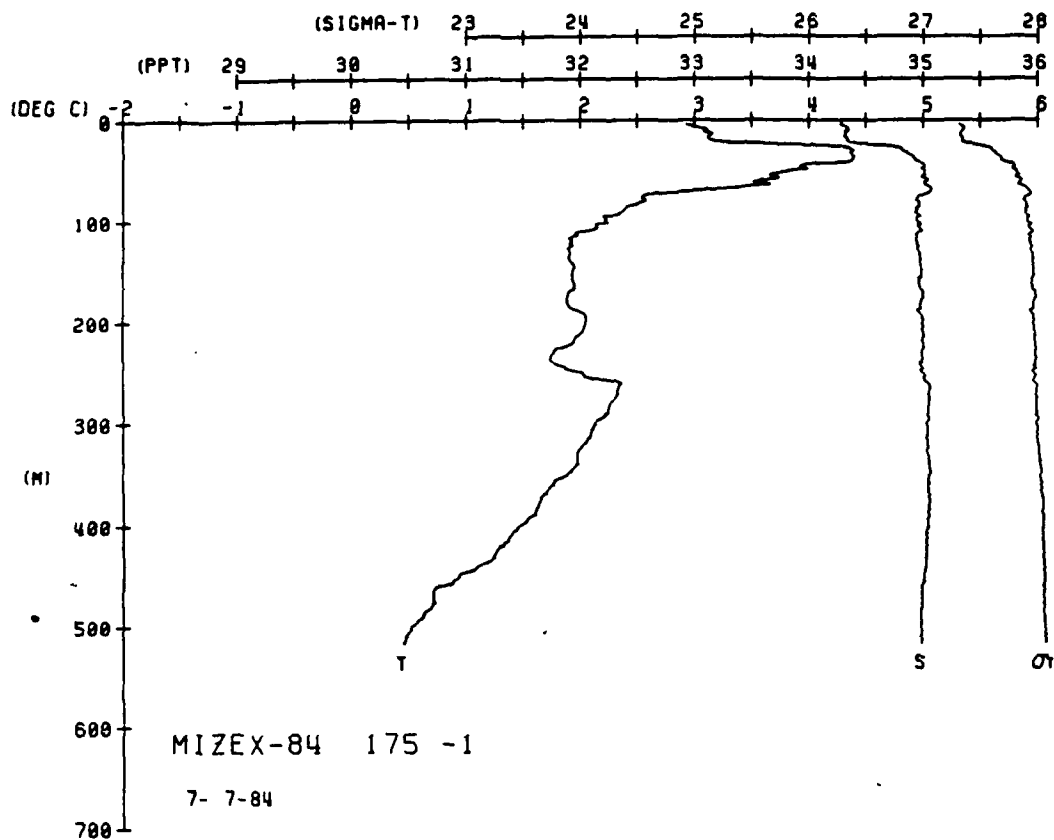


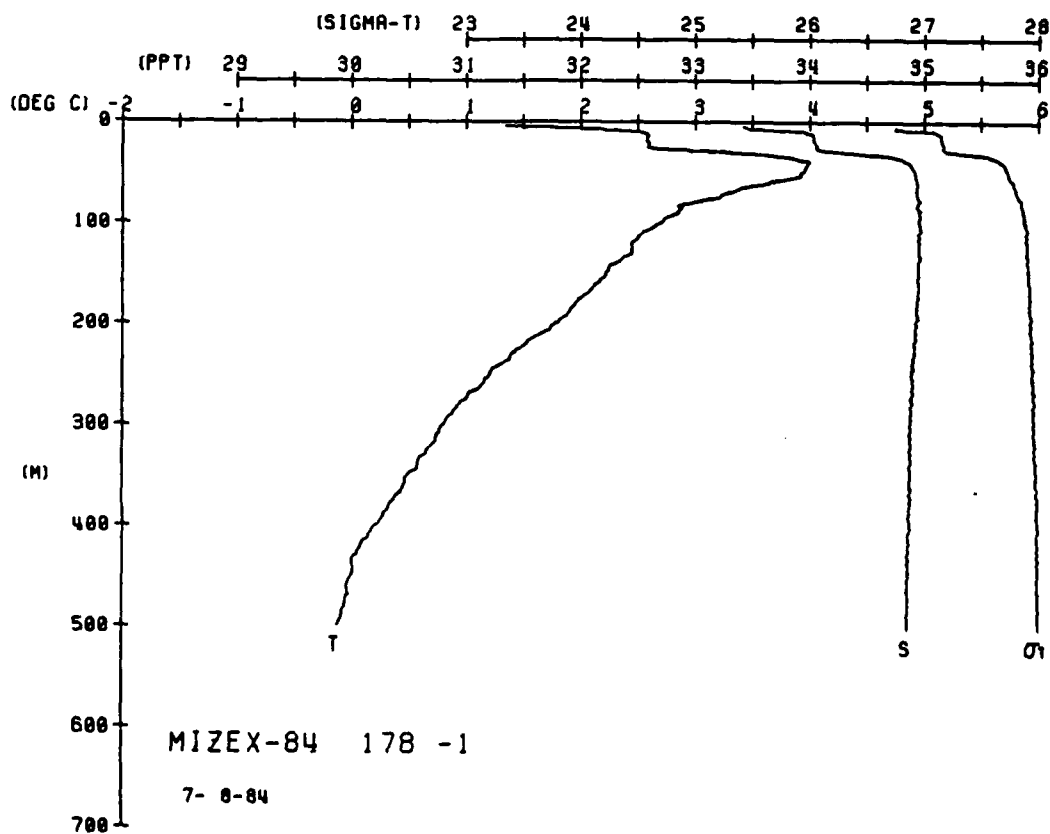
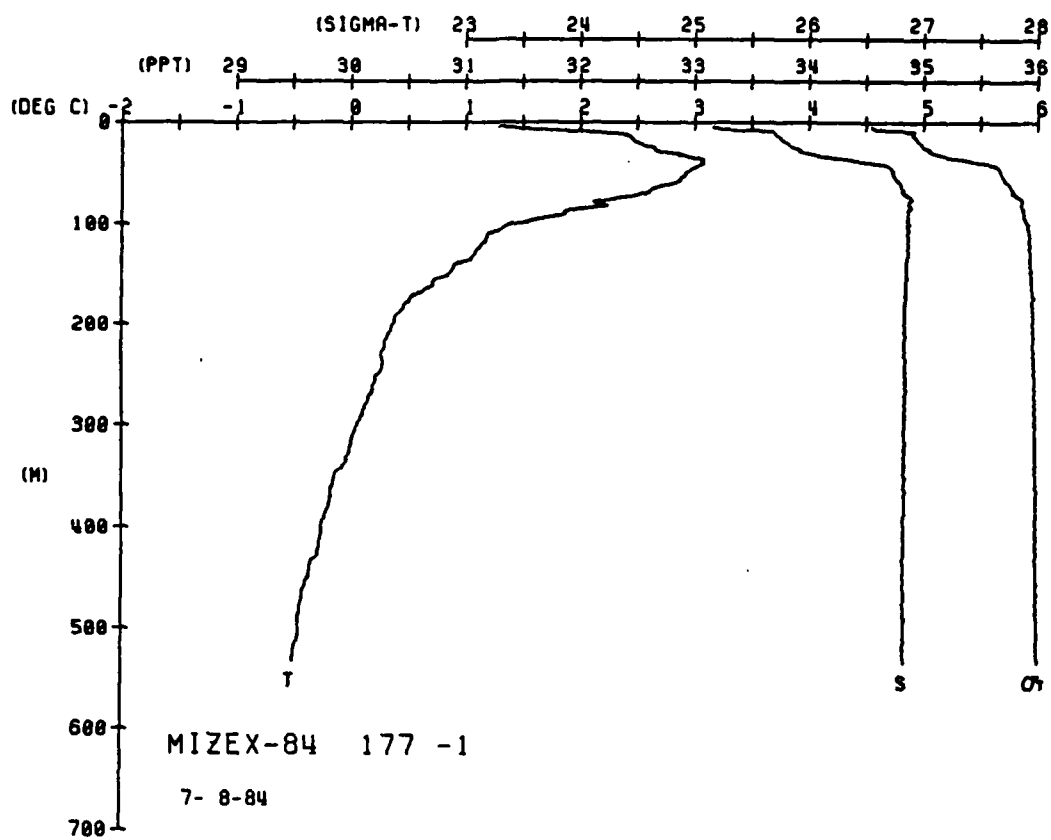
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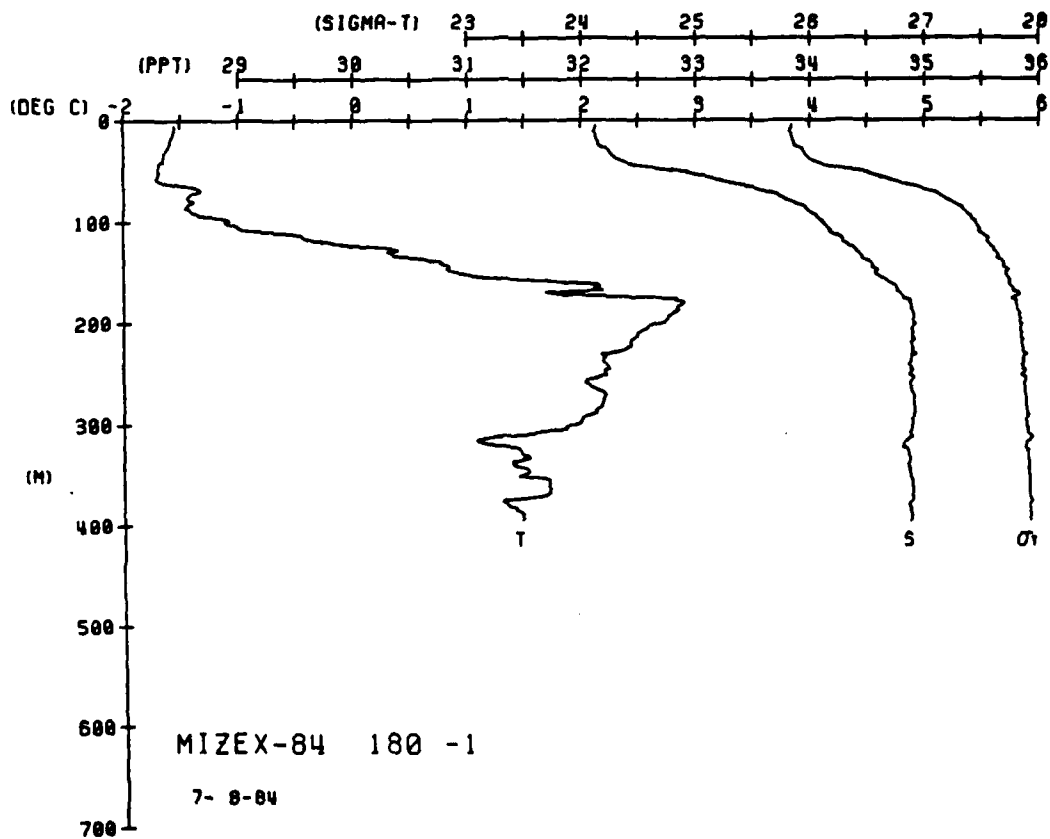
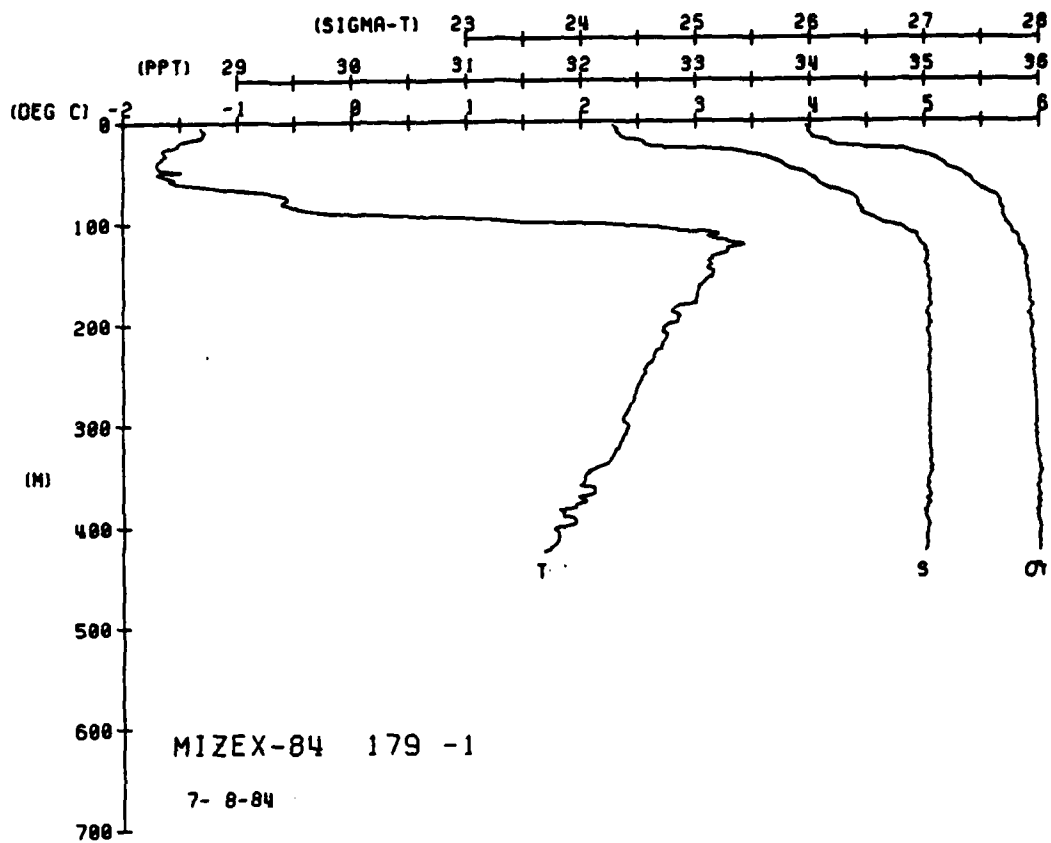
MIXER-04 STATION 175(1) CID 7/JUL/1984 2008 GMT CODE = 1
LAY = 78.9127 LMC = 0.5100M LTR = 30. LGCR = 30.0
TMD = 0.0 WIND = 0.0 WIND = 0.0 SPEED = 0.0

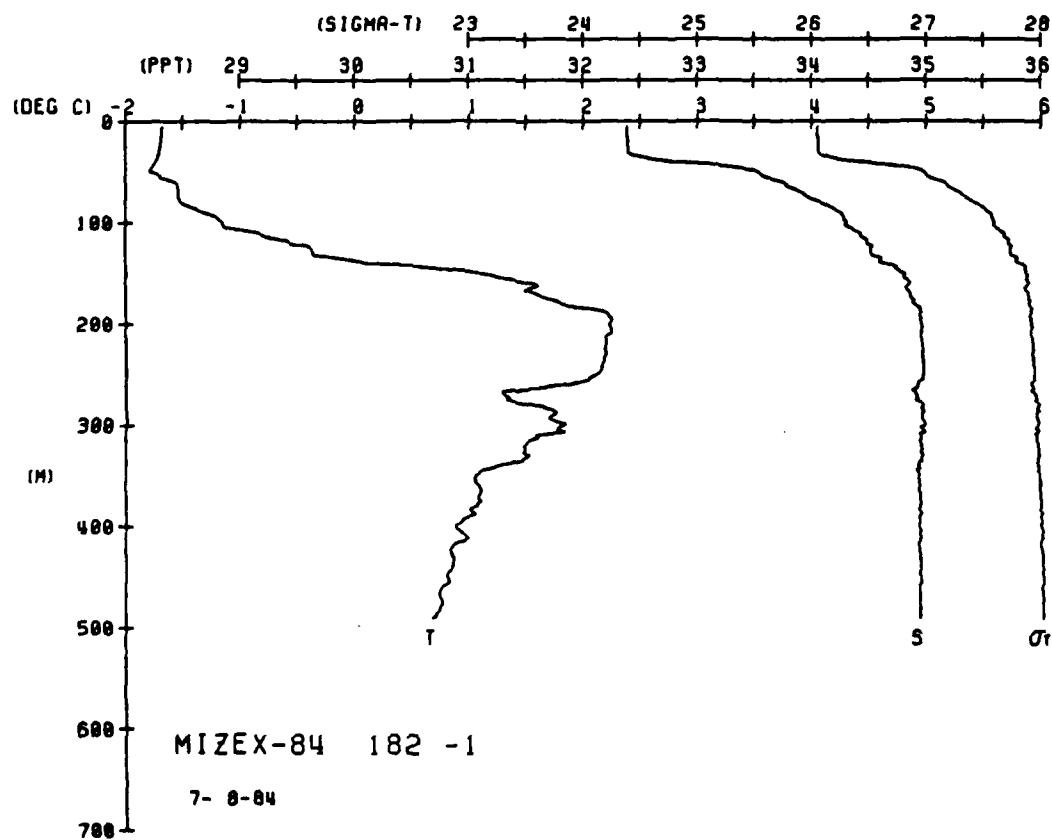
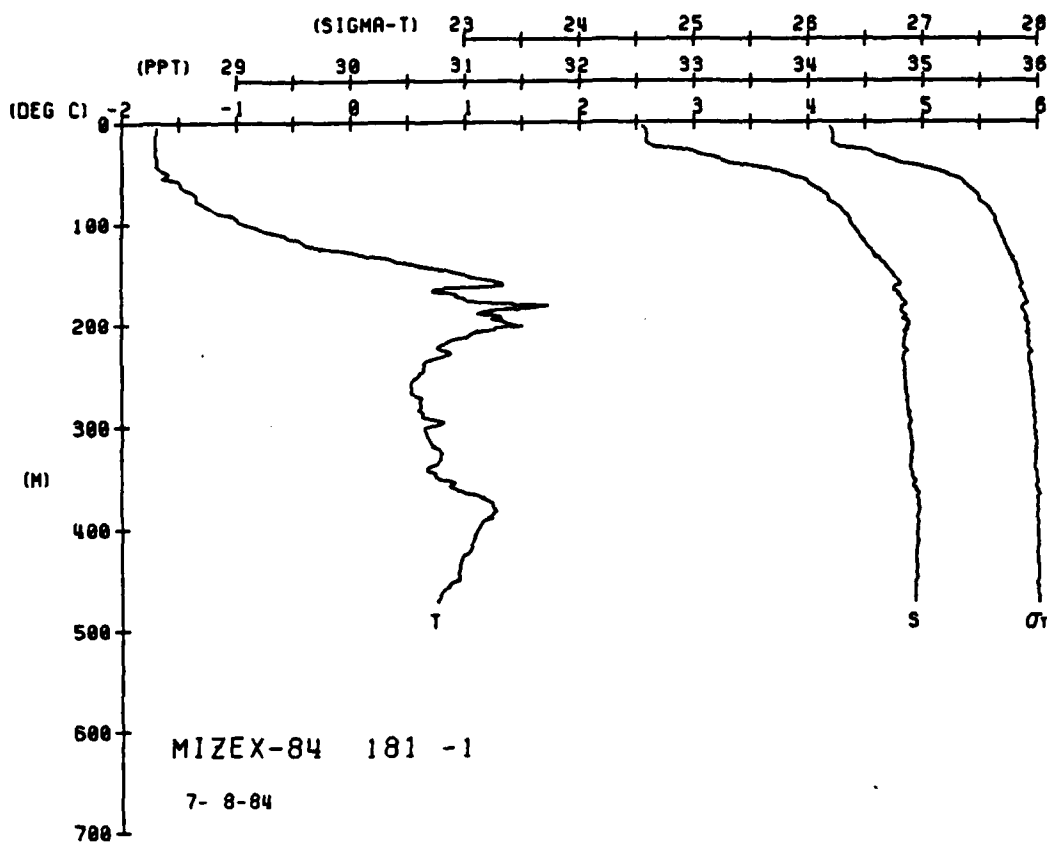
```

[illegible]





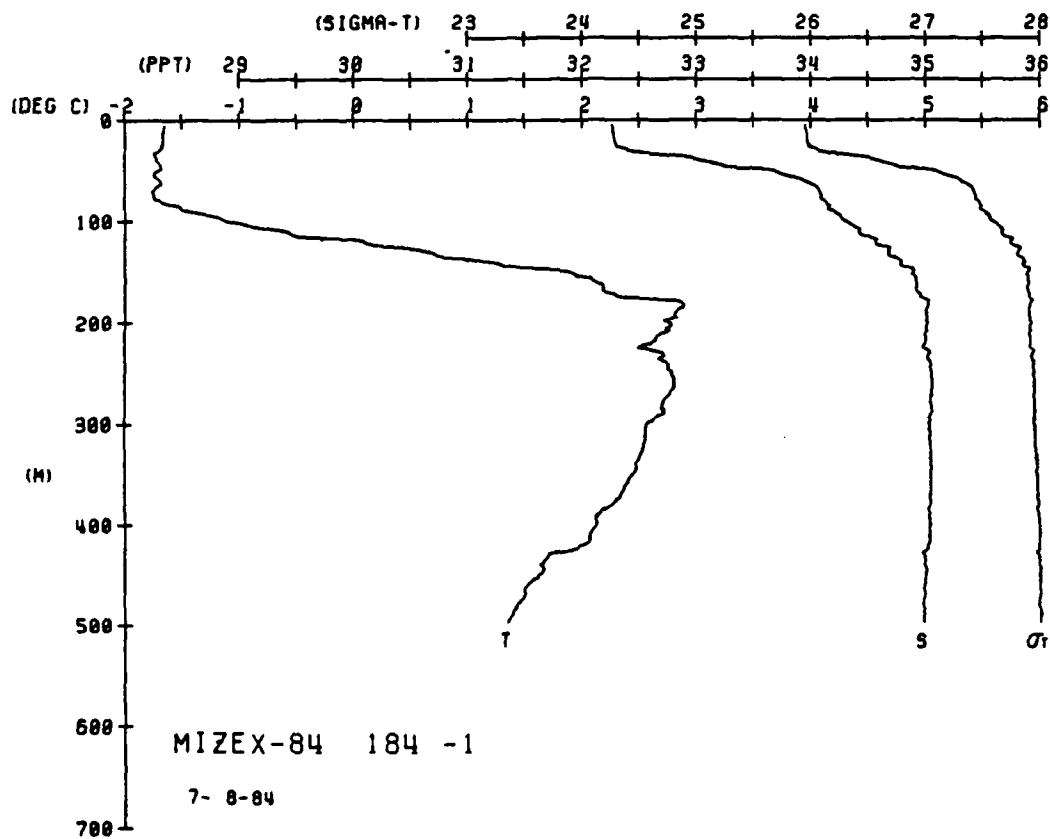
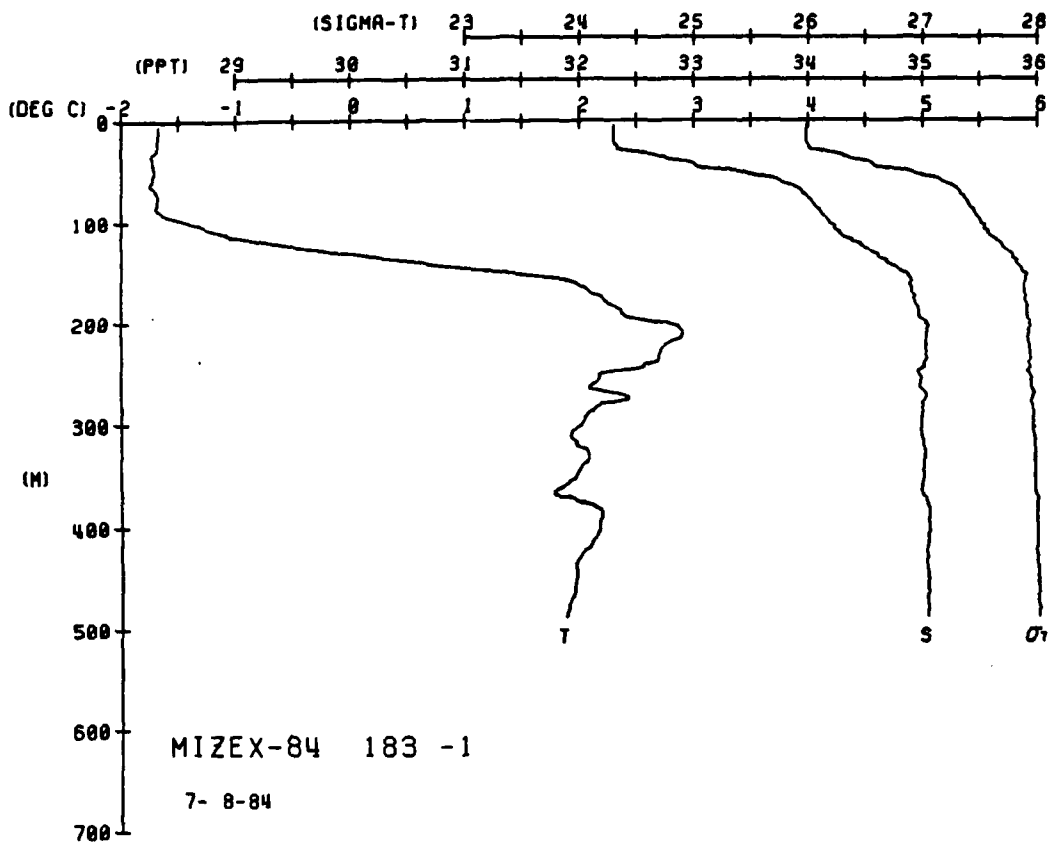


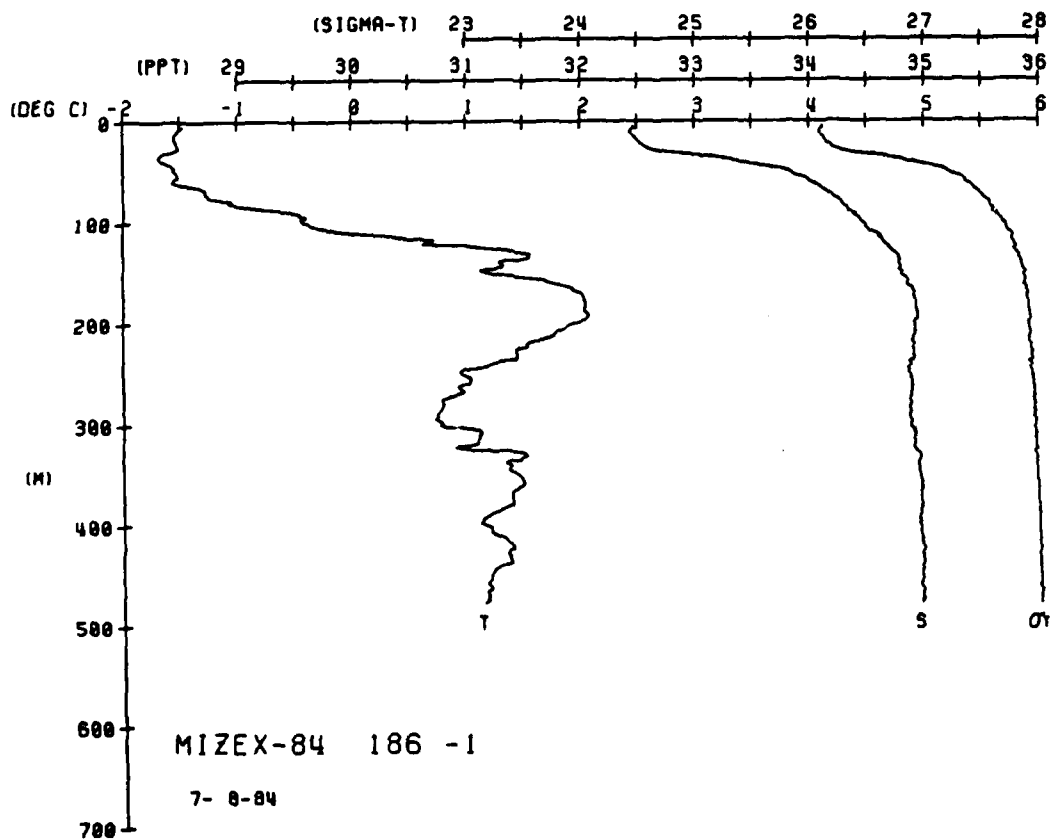
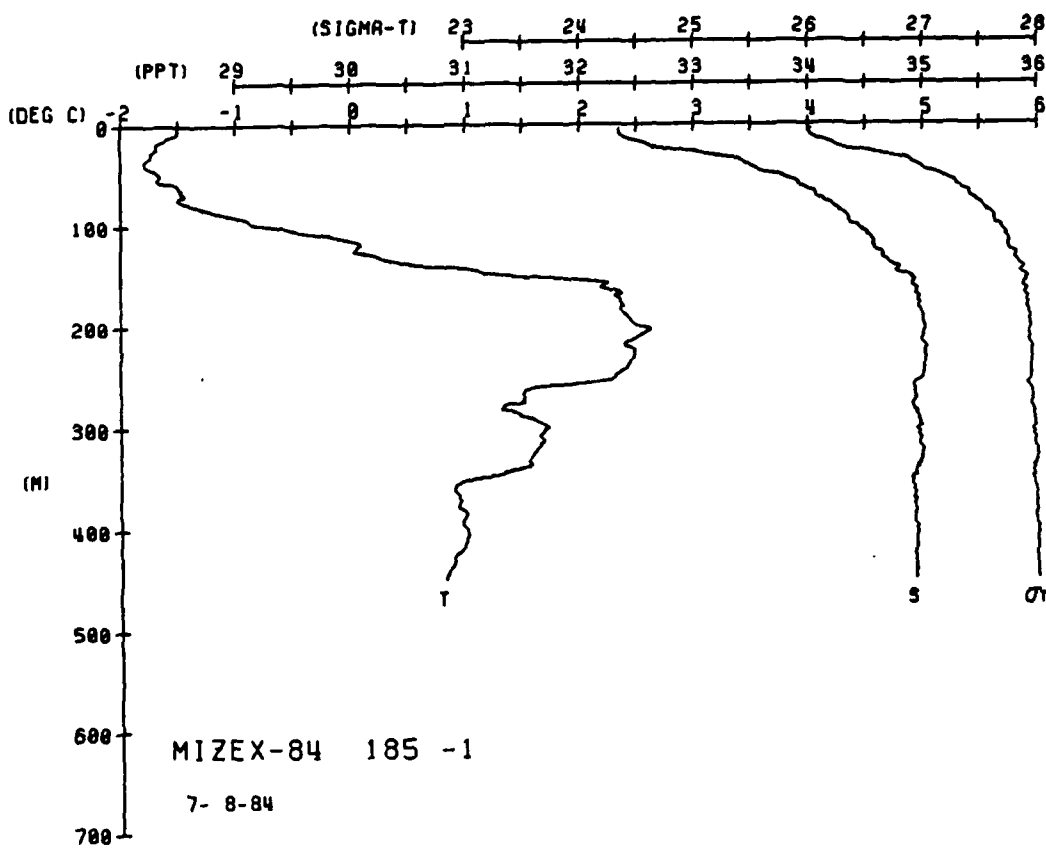


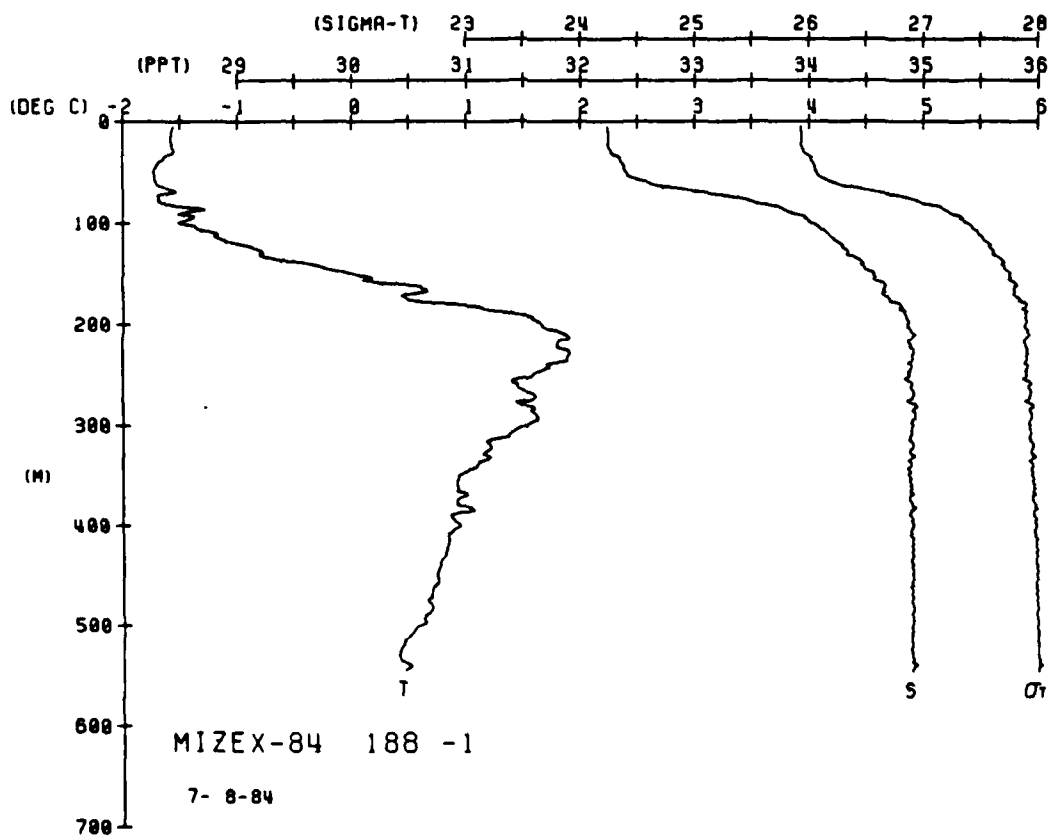
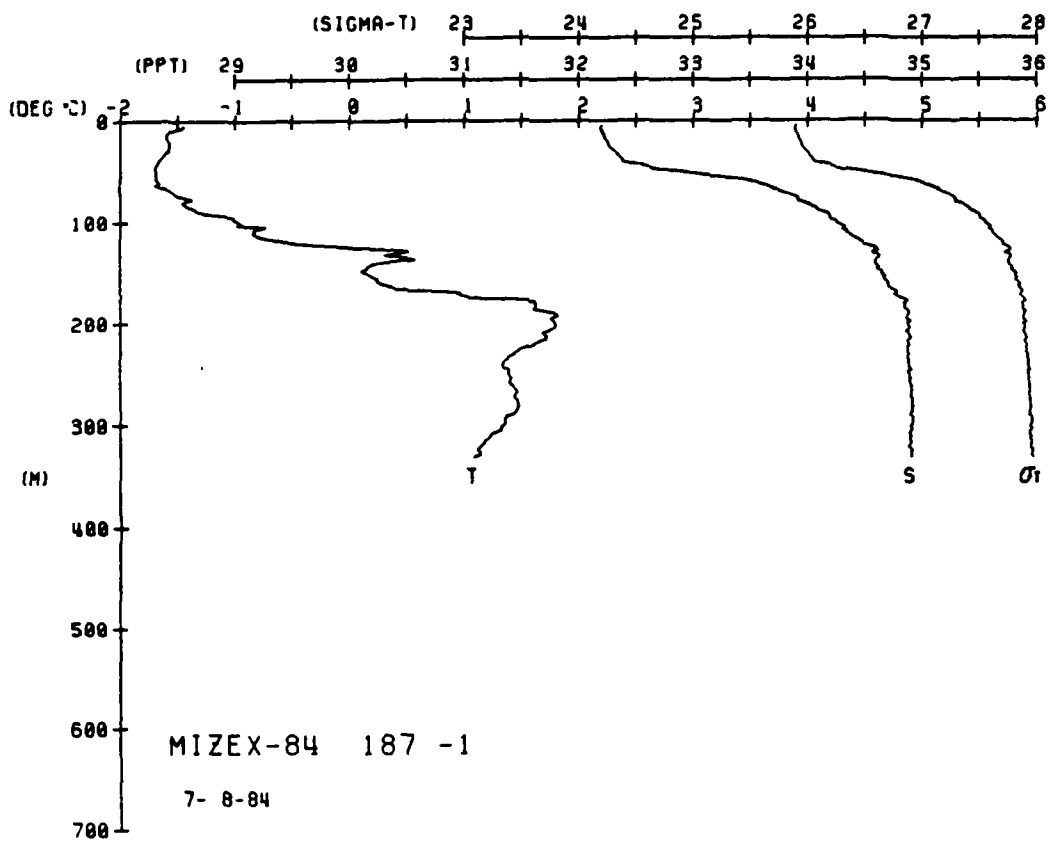
```

MIXEX-04 STATION 103(1) CTD 0/JUL/1984 1540 GMT CODE = 1
LAT = 80.3333N LNG = 1.5033W LTER = 150 LGR = 150
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

```





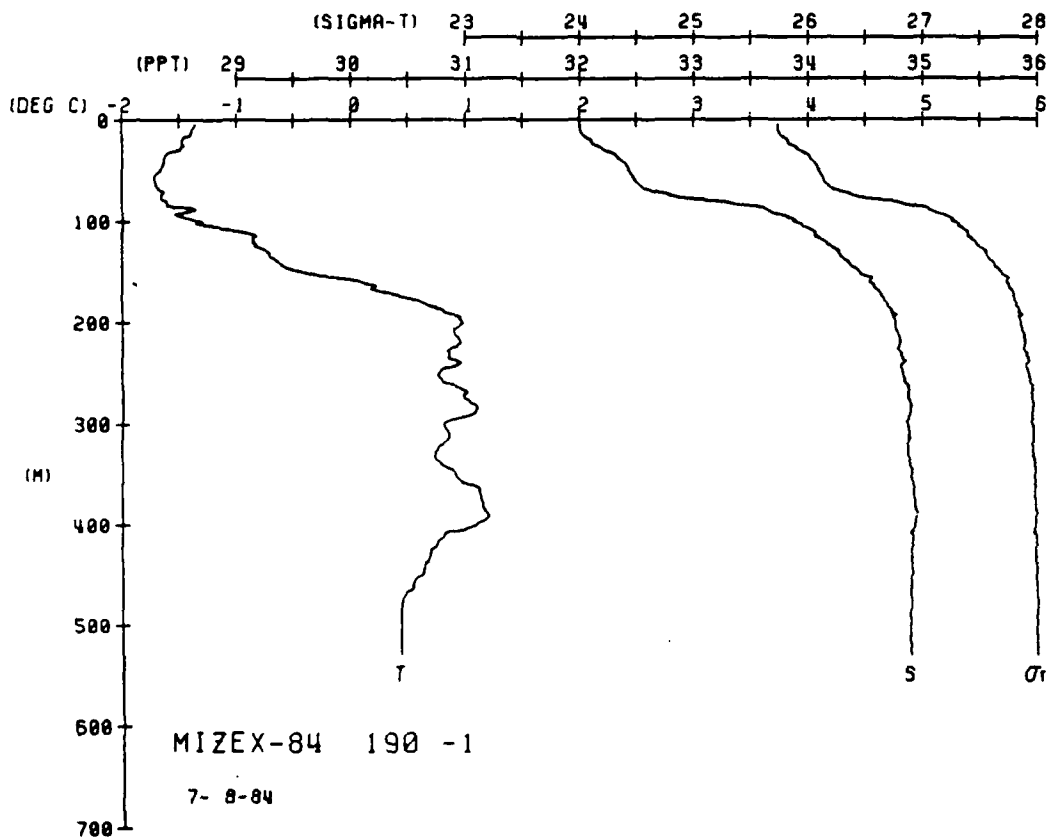
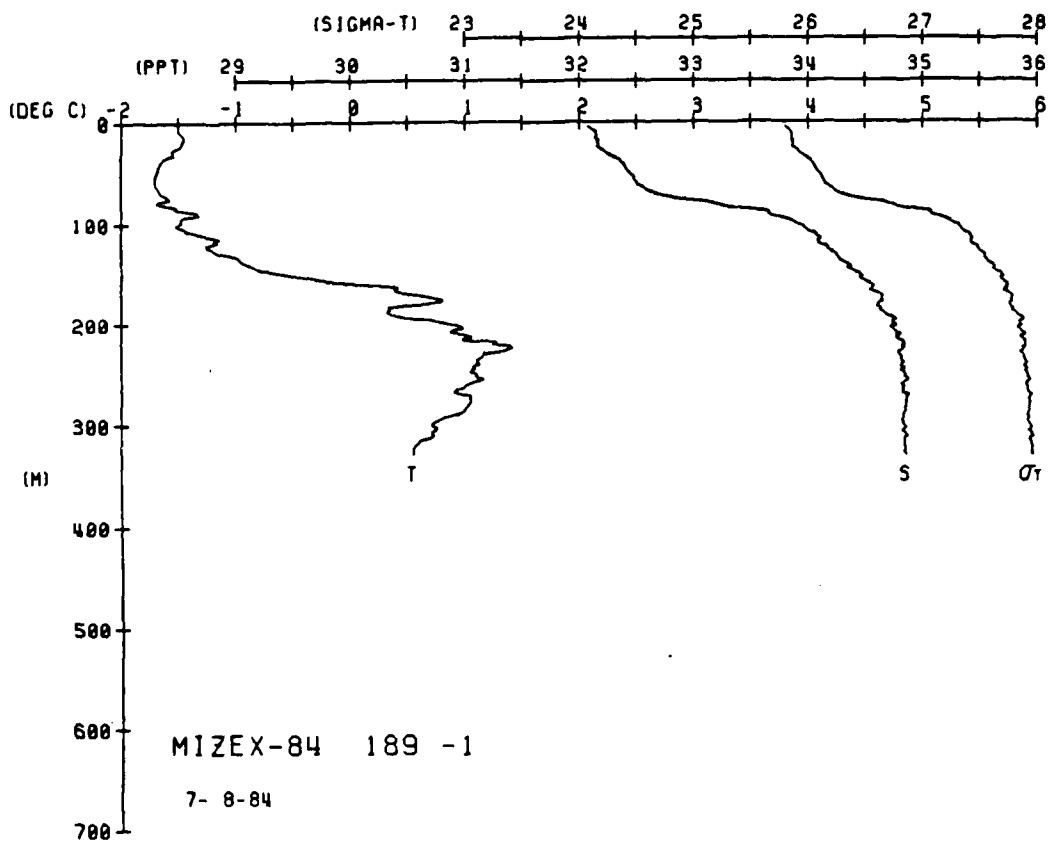


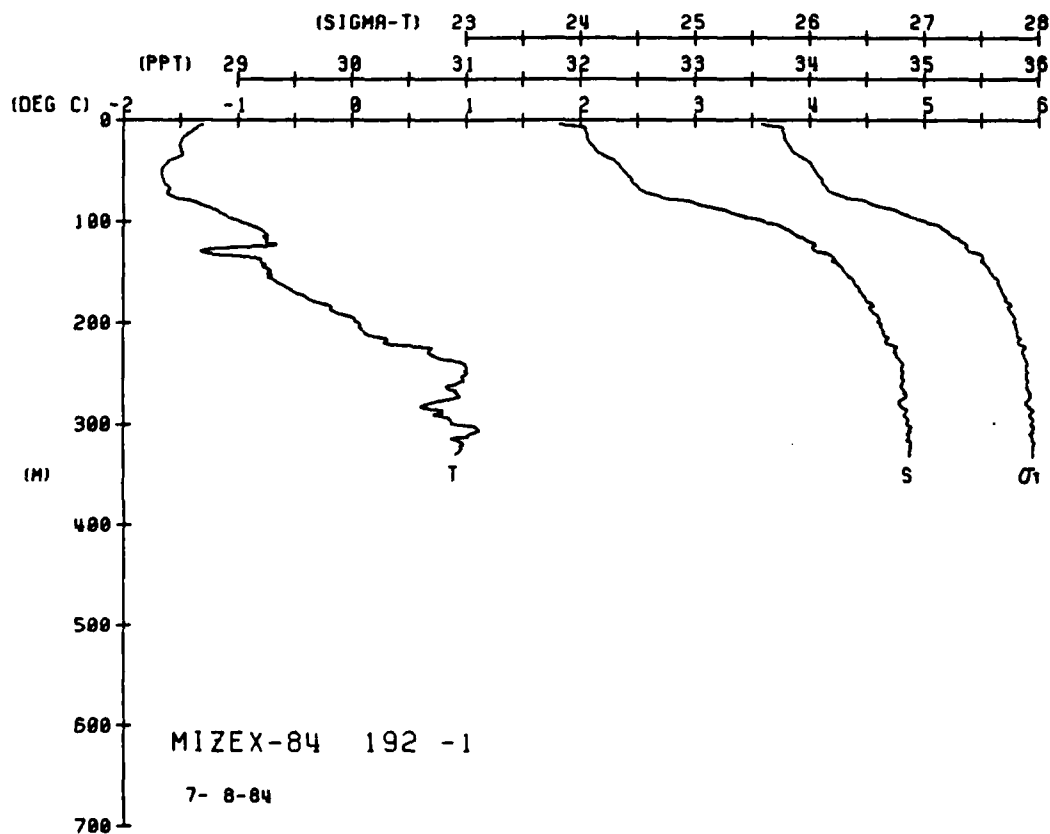
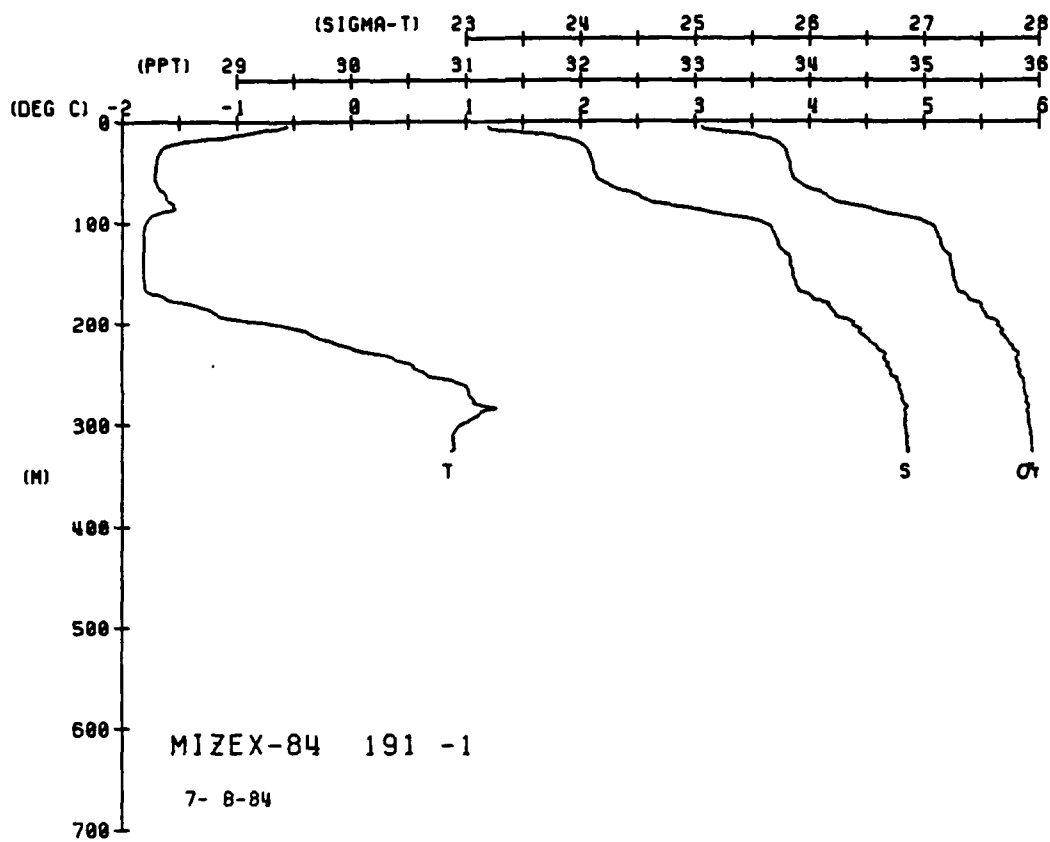
DEPTH TEMP PTMP SALIN SIG T SPVOL DYNHT SOUND

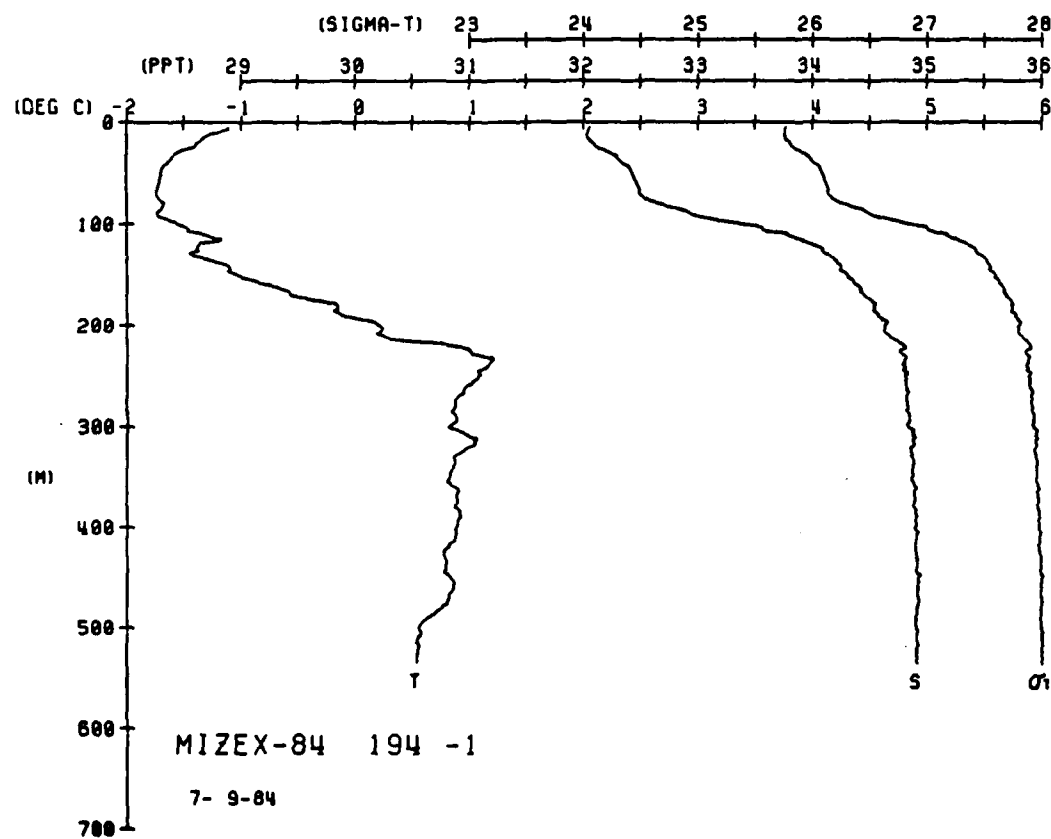
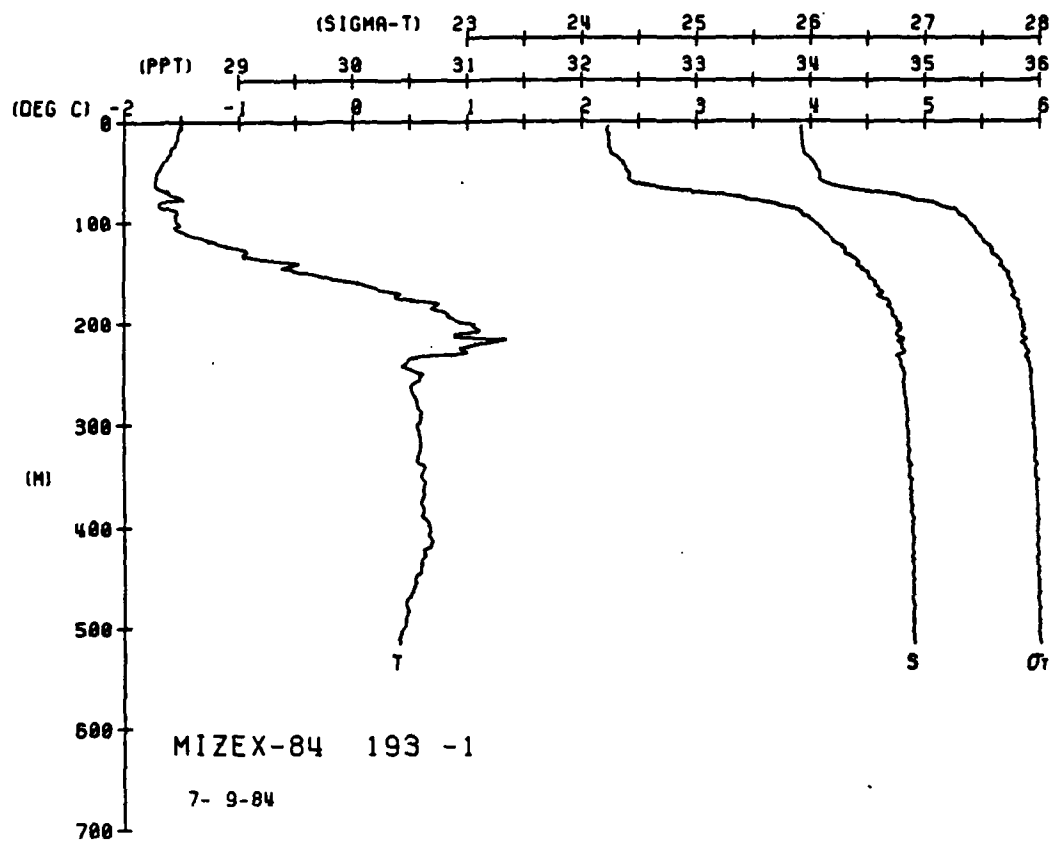
[illegible]

DEPTH TEMP PTMP SALIN SIG T SPV04 DYNHT SOUND

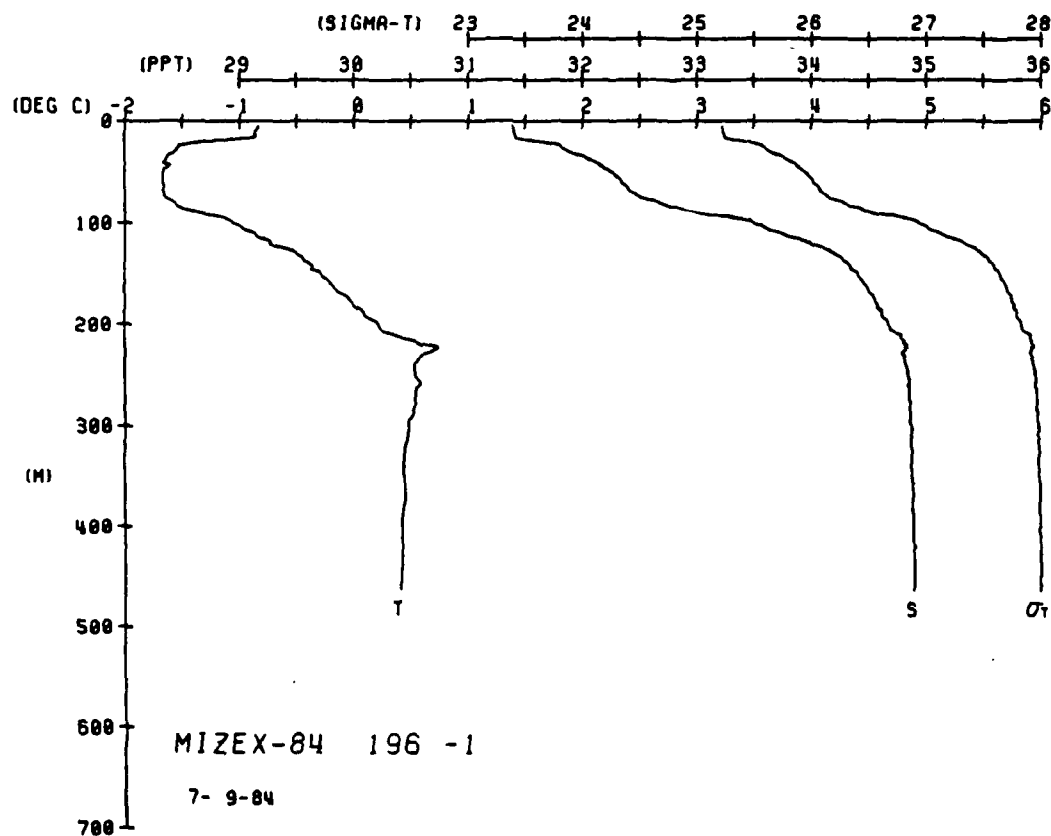
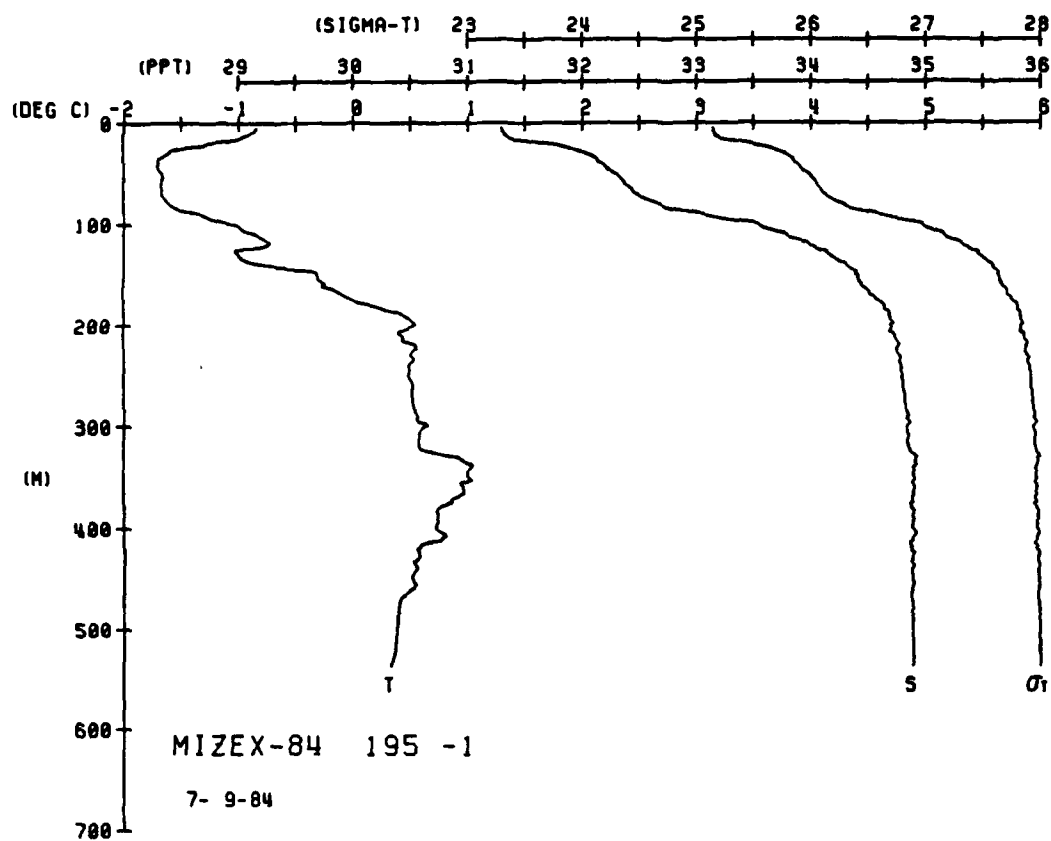
[illegible]

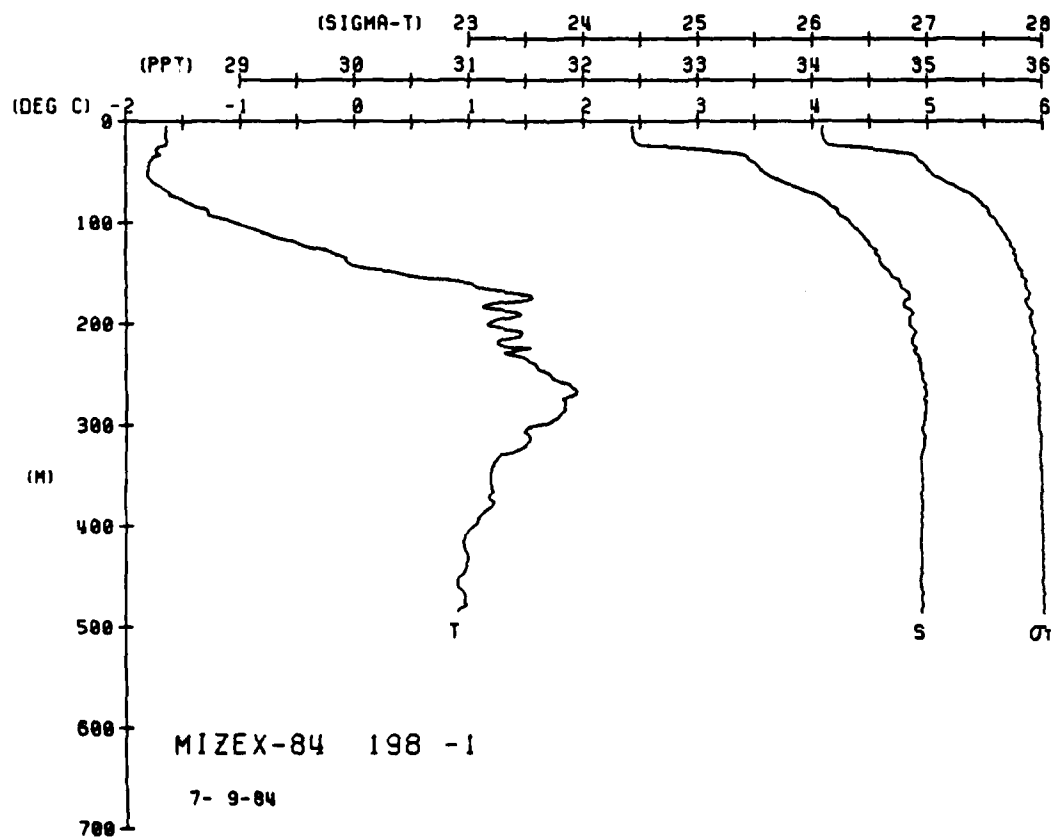
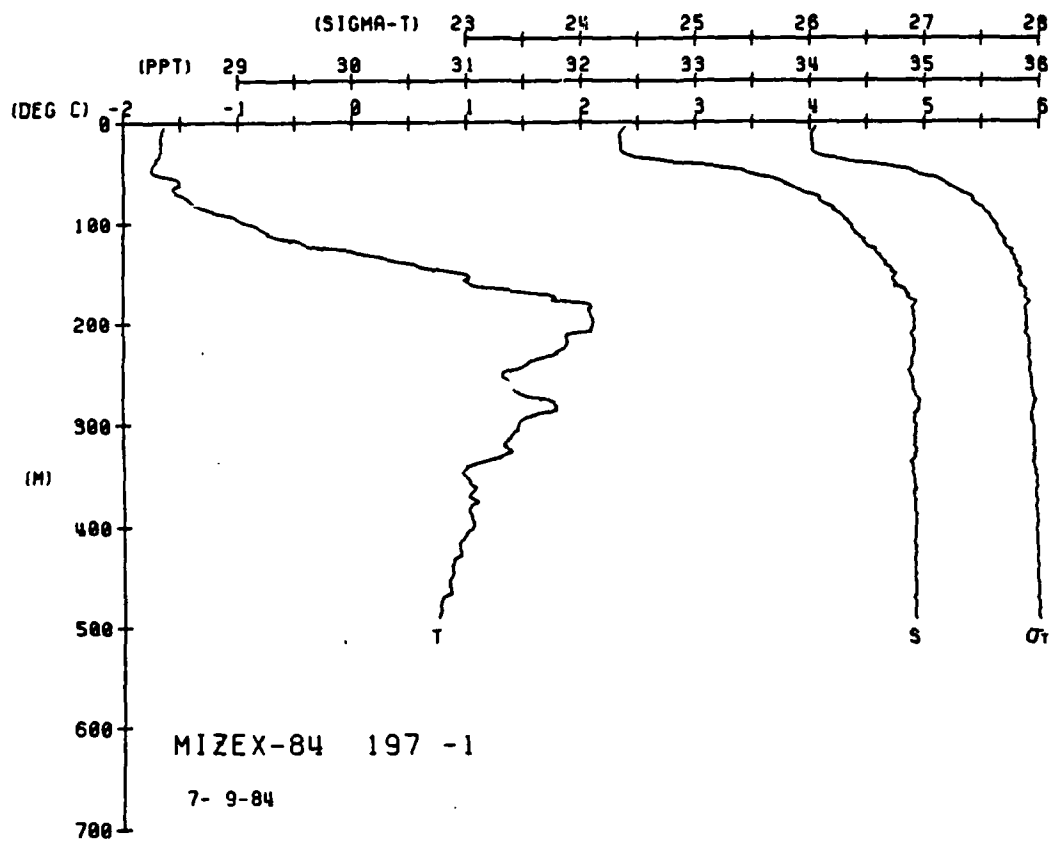


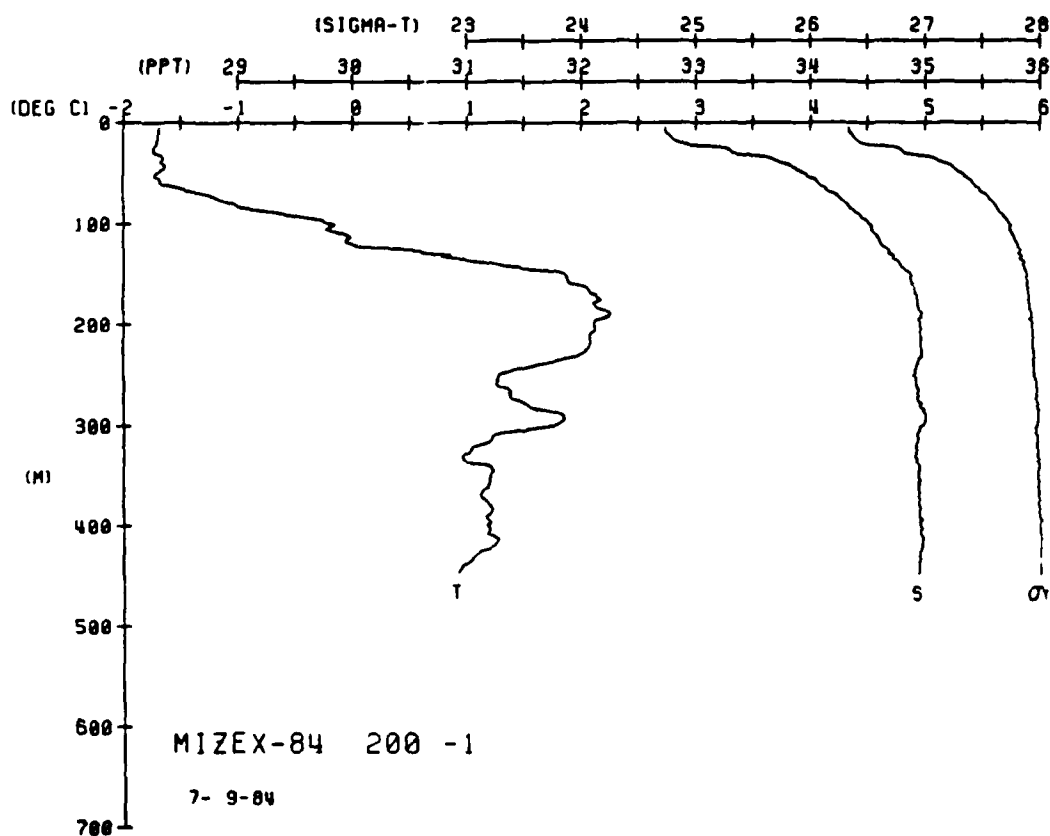
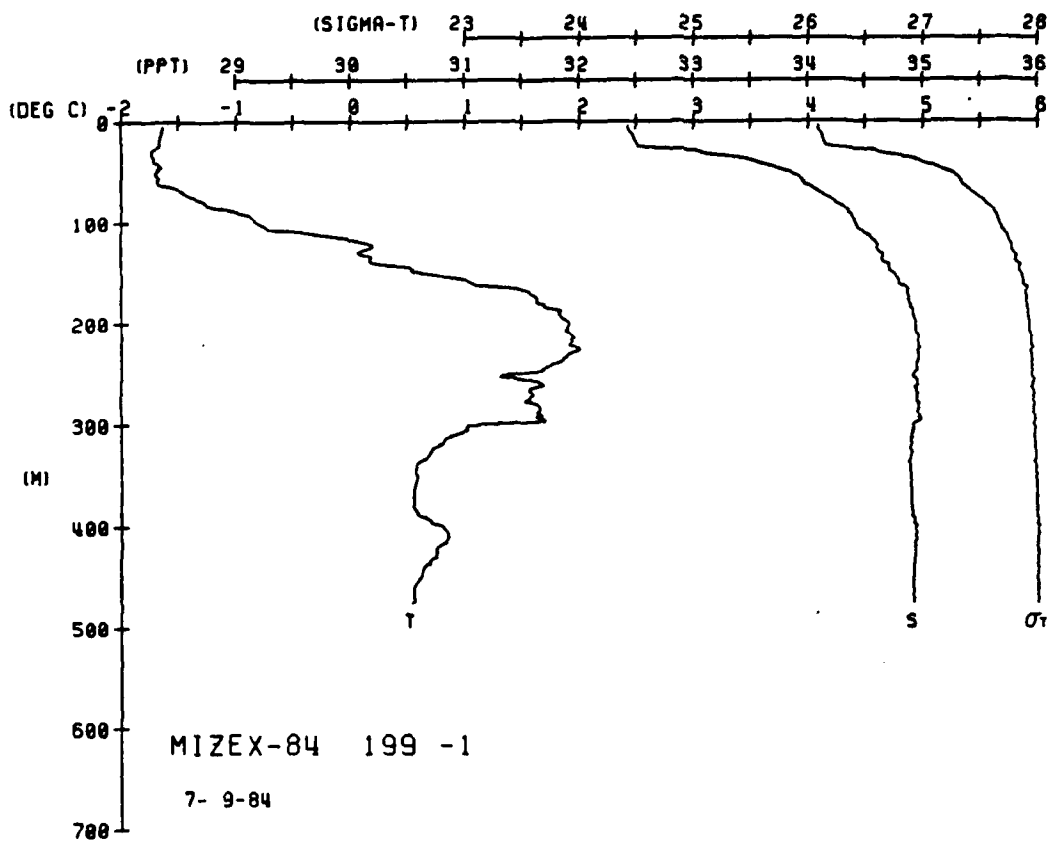


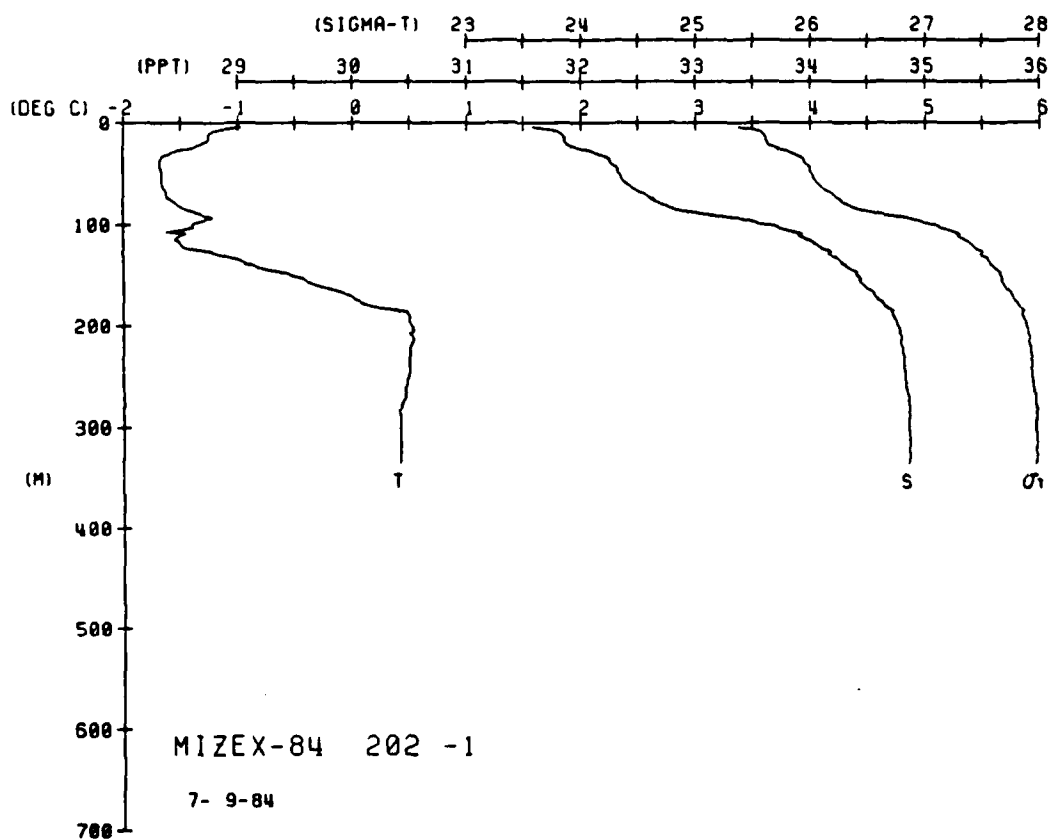
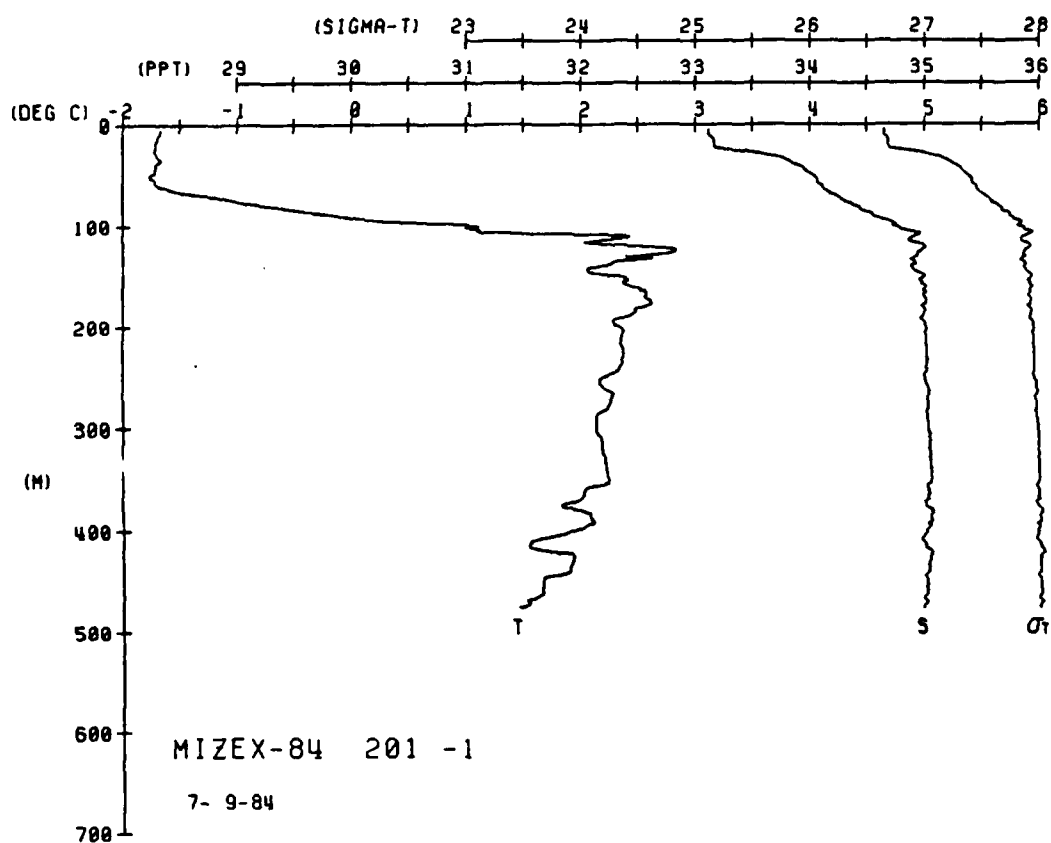


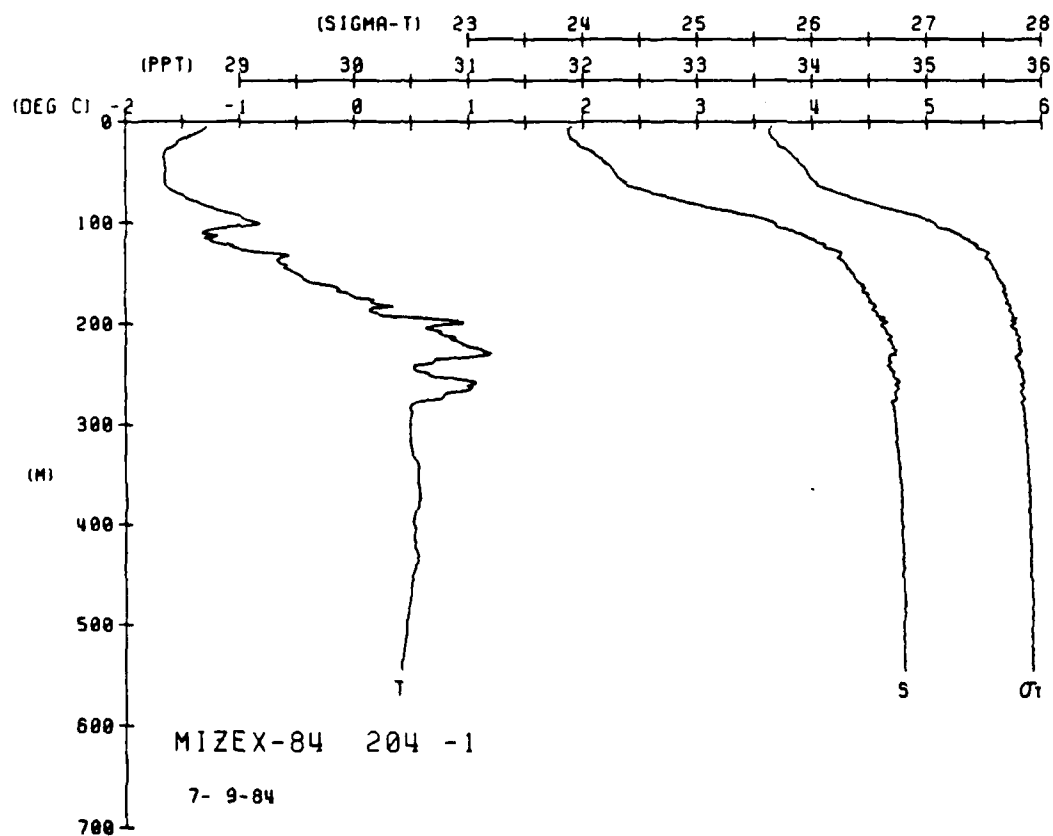
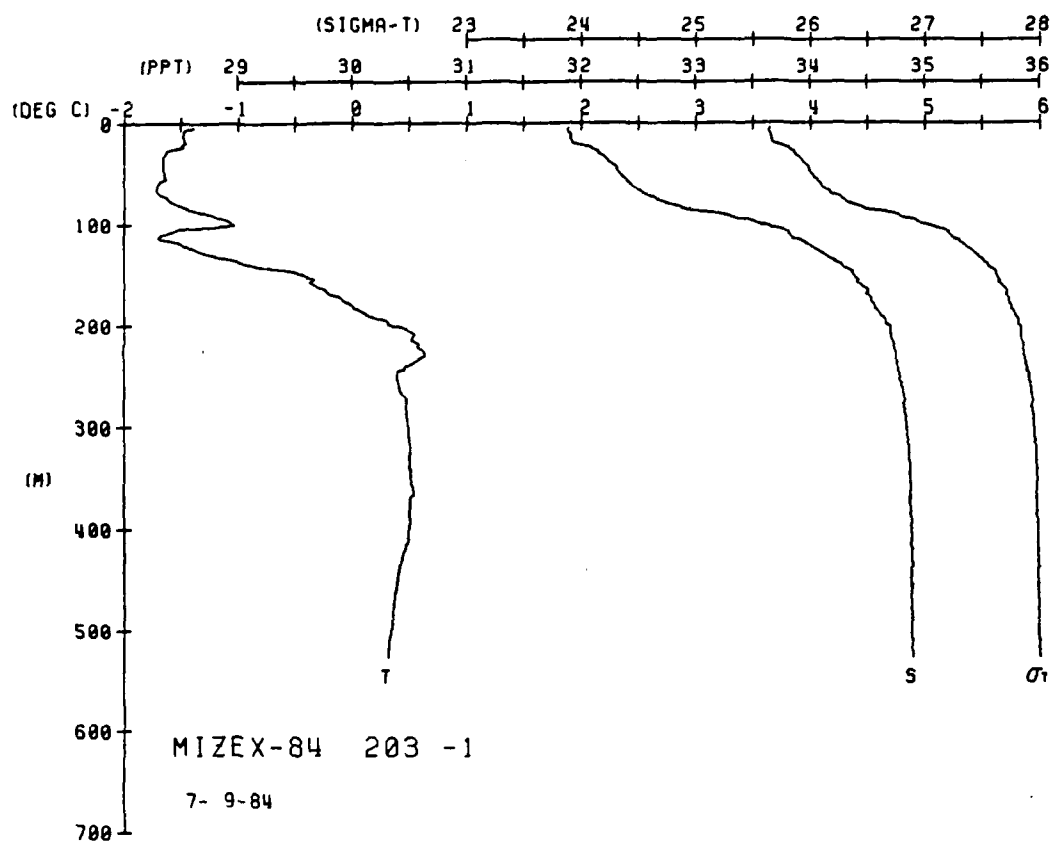
WIXEX-84 STATION 195(1) CTD 9/JUL/1984 241 GMT CODE = 1
LAT = 79.4167N LNC = 5.3733W LTER = 300. LGR = 300.
IN TEMP = 0.0 BARUM = 0.0 WIND = 0.0 SPEED = 0.0









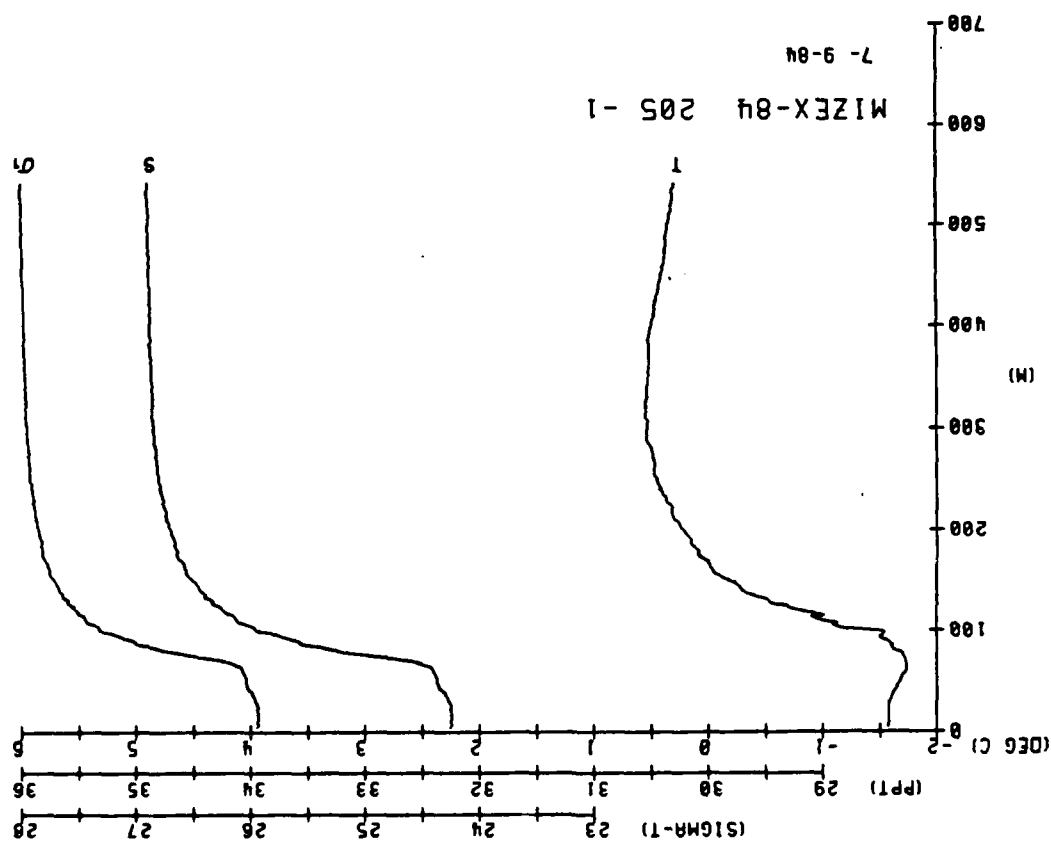
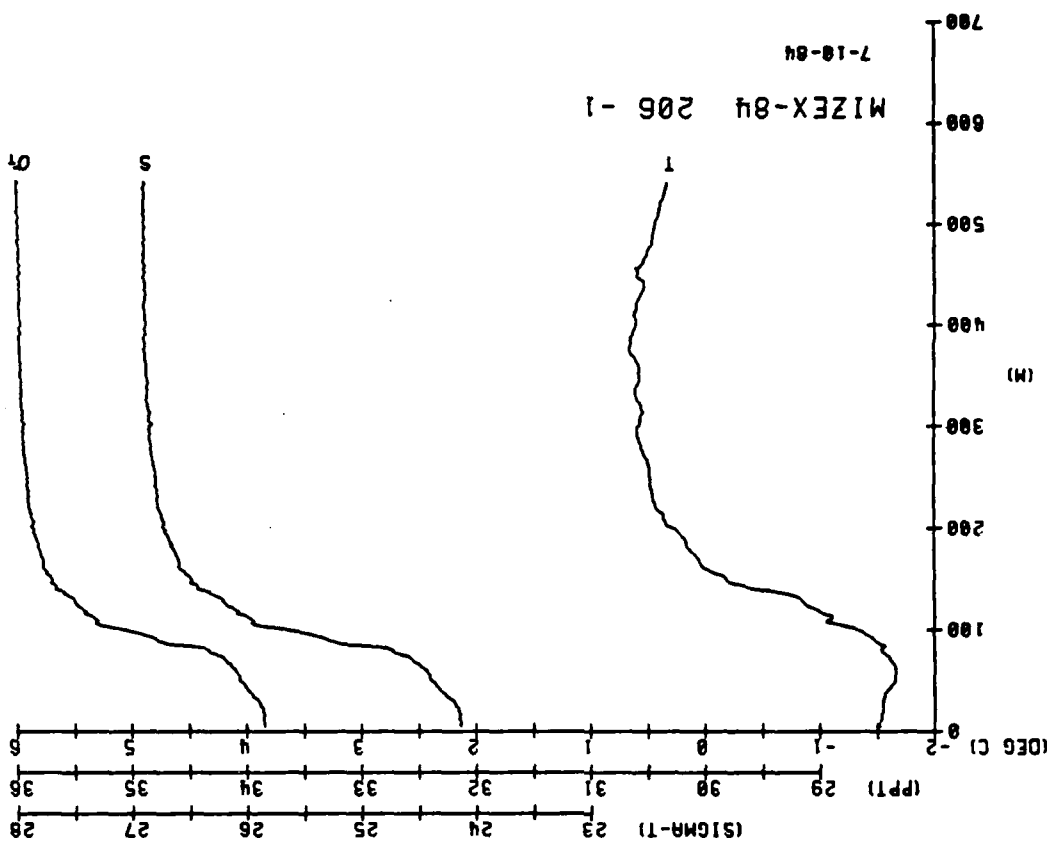


WIMEX-84 STATION 206(1) CTD 10/JUL/1984 3 004 000Z - 4
LAT = 19.7550N LNC = 5.2650W LTER = 300, UGEN = 300,
AIR TEMP = 0.0 BARUM = 0.0 WIND = 0.0 SPEED = 0.0

DEPTH TEMP PTMP SALIN SIG T SPVUL DYNHT SOUND

DEPTH TEMP PTMP SALIN SIG T SPVOL DYNHT SOUND

[illegible][illegible]



1345 GMT CODE = 1
30. UGEH = 30.
0.0 SPEED = 0.0

11/JUL/1984
2.4148 LITER =
0.0 WIND =

10/JUL/1984
5.6/17W LITER =
0.0 WIND =

1345 GMT CODE = 1
30. UGEH = 30.
0.0 SPEED = 0.0

11/JUL/1984
2.4148 LITER =
0.0 WIND =

10/JUL/1984
5.6/17W LITER =
0.0 WIND =

1345 GMT CODE = 1
30. UGEH = 30.
0.0 SPEED = 0.0

11/JUL/1984
2.4148 LITER =
0.0 WIND =

10/JUL/1984
5.6/17W LITER =
0.0 WIND =

1345 GMT CODE = 1
30. UGEH = 30.
0.0 SPEED = 0.0

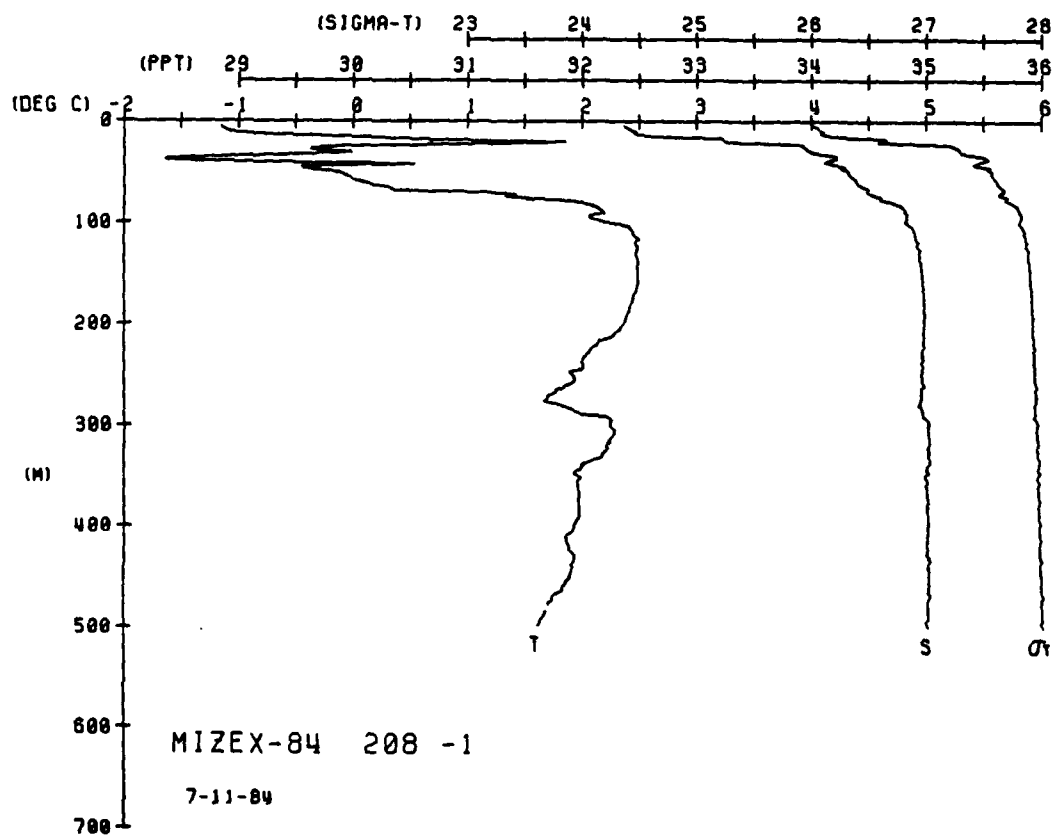
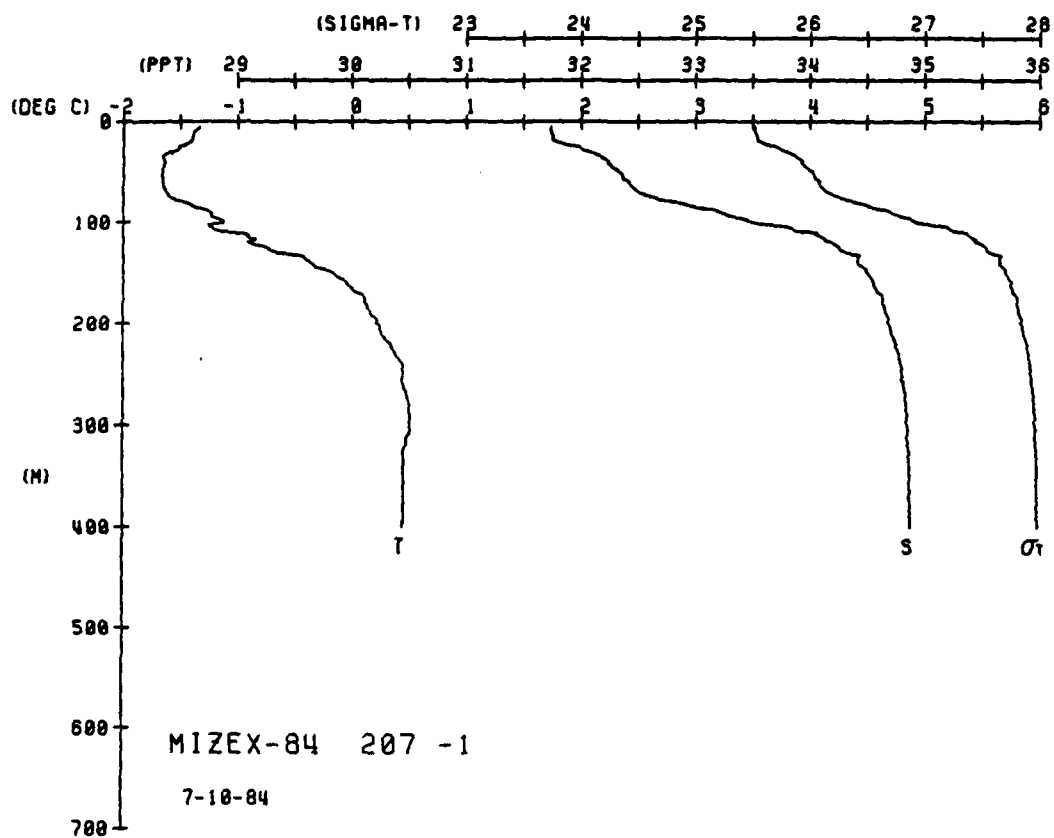
11/JUL/1984
2.4148 LITER =
0.0 WIND =

10/JUL/1984
5.6/17W LITER =
0.0 WIND =

1345 GMT CODE = 1
30. UGEH = 30.
0.0 SPEED = 0.0

11/JUL/1984
2.4148 LITER =
0.0 WIND =

10/JUL/1984
5.6/17W LITER =
0.0 WIND =



WIZEX-64 STATION 210(1) CTD 12/JUL/1984 1140 GMT CUDC =
LAT = 80.5167N LNG = 1.0333E LTER = 400. LGEN = 400.
AIR TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 0.0

DEPTH TEMP PTMP SALIN SIG T SPVOL DYNHT SOUND

	0.0	-1.67	-1.67	32.74	26.34	167.7	0.000	1438.3
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	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

[illegible][illegible]

Variable	Mean	Standard deviation	Skewness	Kurtosis
Age	33.74	3.74	-1.16	3.00
Gender	1.16	0.38	-1.16	3.00
Marital status	1.16	0.38	-1.16	3.00
Education	1.16	0.38	-1.16	3.00
Income	1.16	0.38	-1.16	3.00
Occupation	1.16	0.38	-1.16	3.00
Health status	1.16	0.38	-1.16	3.00
Stress level	1.16	0.38	-1.16	3.00
Life satisfaction	1.16	0.38	-1.16	3.00
Overall well-being	1.16	0.38	-1.16	3.00

[illegible][illegible][illegible]

142.0	0.104	34.15	-1.63	90.0
141.0	0.104	34.15	-1.63	90.0
140.0	0.104	34.15	-1.63	90.0
139.0	0.104	34.15	-1.63	90.0
138.0	0.104	34.15	-1.63	90.0
137.0	0.104	34.15	-1.63	90.0
136.0	0.104	34.15	-1.63	90.0
135.0	0.104	34.15	-1.63	90.0
134.0	0.104	34.15	-1.63	90.0
133.0	0.104	34.15	-1.63	90.0
132.0	0.104	34.15	-1.63	90.0
131.0	0.104	34.15	-1.63	90.0
130.0	0.104	34.15	-1.63	90.0
129.0	0.104	34.15	-1.63	90.0
128.0	0.104	34.15	-1.63	90.0
127.0	0.104	34.15	-1.63	90.0
126.0	0.104	34.15	-1.63	90.0
125.0	0.104	34.15	-1.63	90.0
124.0	0.104	34.15	-1.63	90.0
123.0	0.104	34.15	-1.63	90.0
122.0	0.104	34.15	-1.63	90.0
121.0	0.104	34.15	-1.63	90.0
120.0	0.104	34.15	-1.63	90.0
119.0	0.104	34.15	-1.63	90.0
118.0	0.104	34.15	-1.63	90.0
117.0	0.104	34.15	-1.63	90.0
116.0	0.104	34.15	-1.63	90.0
115.0	0.104	34.15	-1.63	90.0
114.0	0.104	34.15	-1.63	90.0
113.0	0.104	34.15	-1.63	90.0
112.0	0.104	34.15	-1.63	90.0
111.0	0.104	34.15	-1.63	90.0
110.0	0.104	34.15	-1.63	90.0
109.0	0.104	34.15	-1.63	90.0
108.0	0.104	34.15	-1.63	90.0
107.0	0.104	34.15	-1.63	90.0
106.0	0.104	34.15	-1.63	90.0
105.0	0.104	34.15	-1.63	90.0
104.0	0.104	34.15	-1.63	90.0
103.0	0.104	34.15	-1.63	90.0
102.0	0.104	34.15	-1.63	90.0
101.0	0.104	34.15	-1.63	90.0
100.0	0.104	34.15	-1.63	90.0
99.0	0.104	34.15	-1.63	90.0
98.0	0.104	34.15	-1.63	90.0
97.0	0.104	34.15	-1.63	90.0
96.0	0.104	34.15	-1.63	90.0
95.0	0.104	34.15	-1.63	90.0
94.0	0.104	34.15	-1.63	90.0
93.0	0.104	34.15	-1.63	90.0
92.0	0.104	34.15	-1.63	90.0
91.0	0.104	34.15	-1.63	90.0
90.0	0.104	34.15	-1.63	90.0
89.0	0.104	34.15	-1.63	90.0
88.0	0.104	34.15	-1.63	90.0
87.0	0.104	34.15	-1.63	90.0
86.0	0.104	34.15	-1.63	90.0
85.0	0.104	34.15	-1.63	90.0
84.0	0.104	34.15	-1.63	90.0
83.0	0.104	34.15	-1.63	90.0
82.0	0.104	34.15	-1.63	90.0
81.0	0.104	34.15	-1.63	90.0
80.0	0.104	34.15	-1.63	90.0
79.0	0.104	34.15	-1.63	90.0
78.0	0.104	34.15	-1.63	90.0
77.0	0.104	34.15	-1.63	90.0
76.0	0.104	34.15	-1.63	90.0
75.0	0.104	34.15	-1.63	90.0
74.0	0.104	34.15	-1	

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Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099																																																																																																																																								
1990	1448.0	1449.0	1450.0	1451.0	1452.0	1453.0	1454.0	1455.0	1456.0	1457.0	1458.0	1459.0	1460.0	1461.0	1462.0	1463.0	1464.0	1465.0	1466.0	1467.0	1468.0	1469.0	1470.0	1471.0	1472.0	1473.0	1474.0	1475.0	1476.0	1477.0	1478.0	1479.0	1480.0	1481.0	1482.0	1483.0	1484.0	1485.0	1486.0	1487.0	1488.0	1489.0	1490.0	1491.0	1492.0	1493.0	1494.0	1495.0	1496.0	1497.0	1498.0	1499.0	1500.0	1501.0	1502.0	1503.0	1504.0	1505.0	1506.0	1507.0	1508.0	1509.0	1510.0	1511.0	1512.0	1513.0	1514.0	1515.0	1516.0	1517.0	1518.0	1519.0	1520.0	1521.0	1522.0	1523.0	1524.0	1525.0	1526.0	1527.0	1528.0	1529.0	1530.0	1531.0	1532.0	1533.0	1534.0	1535.0	1536.0	1537.0	1538.0	1539.0	1540.0	1541.0	1542.0	1543.0	1544.0	1545.0	1546.0	1547.0	1548.0	1549.0	1550.0	1551.0	1552.0	1553.0	1554.0	1555.0	1556.0	1557.0	1558.0	1559.0	1560.0	1561.0	1562.0	1563.0	1564.0	1565.0	1566.0	1567.0	1568.0	1569.0	1570.0	1571.0	1572.0	1573.0	1574.0	1575.0	1576.0	1577.0	1578.0	1579.0	1580.0	1581.0	1582.0	1583.0	1584.0	1585.0	1586.0	1587.0	1588.0	1589.0	1590.0	1591.0	1592.0	1593.0	1594.0	1595.0	1596.0	1597.0	1598.0	1599.0	1600.0	1601.0	1602.0	1603.0	1604.0	1605.0	1606.0	1607.0	1608.0	1609.0	1610.0	1611.0	1612.0	1613.0	1614.0	1615.0	1616.0	1617.0	1618.0	1619.0	1620.0	1621.0	1622.0	1623.0	1624.0	1625.0	1626.0	1627.0	1628.0	1629.0	1630.0	1631.0	1632.0	1633.0	1634.0	1635.0	1636.0	1637.0	1638.0	1639.0	1640.0	1641.0	1642.0	1643.0	1644.0	1645.0	1646.0	1647.0	1648.0	1649.0	1650.0	1651.0	1652.0	1653.0	1654.0	1655.0	1656.0	1657.0	1658.0	1659.0	1660.0	1661.0	1662.0	1663.0	1664.0	1665.0	1666.0	1667.0	1668.0	1669.0	1670.0	1671.0	1672.0	1673.0	1674.0	1675.0	1676.0	1677.0	1678.0	1679.0	1680.0	1681.0	1682.0	1683.0	1684.0	1685.0	1686.0	1687.0	1688.0	1689.0	1690.0	1691.0	1692.0	1693.0

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Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099

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0.991	0.990	0.989	0.988	0.987	0.986	0.985	0.984	0.983	0.982	0.981	0.980	0.979	0.978	0.977	0.976	0.975	0.974	0.973	0.972	0.971	0.970	0.969	0.968	0.967	0.966	0.965	0.964	0.963	0.962	0.961	0.960	0.959	0.958	0.957	0.956	0.955	0.954	0.953	0.952	0.951	0.950	0.949	0.948	0.947	0.946	0.945	0.944	0.943	0.942	0.941	0.940	0.939	0.938	0.937	0.936	0.935	0.934	0.933	0.932	0.931	0.930	0.929	0.928	0.927	0.926	0.925	0.924	0.923	0.922	0.921	0.920	0.919	0.918	0.917	0.916	0.915	0.914	0.913	0.912	0.911	0.910	0.909	0.908	0.907	0.906	0.905	0.904	0.903	0.902	0.901	0.900	0.899	0.898	0.897	0.896	0.895	0.894	0.893	0.892	0.891	0.890	0.889	0.888	0.887	0.886	0.885	0.884	0.883	0.882	0.881	0.880	0.879	0.878	0.877	0.876	0.875	0.874	0.873	0.872	0.871	0.870	0.869	0.868	0.867	0.866	0.865	0.864	0.863	0.862	0.861	0.860	0.859	0.858	0.857	0.856	0.855	0.854	0.853	0.852	0.851	0.850	0.849	0.848	0.847	0.846	0.845	0.844	0.843	0.842	0.841	0.840	0.839	0.838	0.837	0.836	0.835	0.834	0.833	0.832	0.831	0.830	0.829	0.828	0.827	0.826	0.825	0.824	0.823	0.822	0.821	0.820	0.819	0.818	0.817	0.816	0.815	0.814	0.813	0.812	0.811	0.810	0.809	0.808	0.807	0.806	0.805	0.804	0.803	0.802	0.801	0.800	0.799	0.798	0.797	0.796	0.795	0.794	0.793	0.792	0.791	0.790	0.789	0.788	0.787	0.786	0.785	0.784	0.783	0.782	0.781	0.780	0.779	0.778	0.777	0.776	0.775	0.774	0.773	0.772	0.771	0.770	0.769	0.768	0.767	0.766	0.765	0.764	0.763	0.762	0.761	0.760	0.759	0.758	0.757	0.756	0.755	0.754	0.753	0.752	0.751	0.750	0.749	0.748	0.747	0.746	0.745	0.744	0.743	0.742	0.741	0.740	0.739	0.738	0.737	0.736	0.735	0.734	0.733	0.732	0.731	0.730	0.729	0.728	0.727	0.726	0.725	0.724	0.723	0.722	0.721	0.720	0.719	0.718	0.717	0.716	0.715	0.714	0.713	0.712	0.711	0.710	0.709	0.708	0.707	0.706	0.705	0.704	0.703	0.702	0.701	0.700	0.699	0.698	0.697	0.696	0.695	0.694	0.693	0.692	0.691	0.690	0.689	0.688	0.687	0.686	0.685	0.684	0.683	0.682	0.681	0.680	0.679	0.678	0.677	0.676	0.675	0.674	0.673	0.672	0.671	0.670	0.669	0.668	0.667	0.666	0.665	0.664	0.663	0.662	0.661	0.660	0.659	0.658	0.657	0.656	0.655	0.654	0.653	0.652	0.651	0.650	0.649	0.648	0.647	0.646	0.645	0.644	0.643	0.642	0.641	0.640	0.639	0.638	0.637	0.636	0.635	0.634	0.633	0.632	0.631	0.630	0.629	0.628	0.627	0.626	0.625	0.624	0.623	0.622	0.621	0.620
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Case	Age	Sex	Height	Weight	Temperature	Pulse	Respiration	Blood Pressure	Heart	Lungs	Stomach	Intestines	Genitals	Neurology	Diagnosis	Prognosis	Treatment	Outcome
1	14	M	5' 10"	150	98.6	72	18	120/80	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered
2	15	F	5' 8"	130	98.4	70	16	110/70	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered
3	16	M	5' 11"	160	98.8	74	19	125/85	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered
4	17	F	5' 9"	140	98.5	71	17	115/75	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered
5	18	M	5' 12"	170	98.9	76	20	130/90	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered
6	19	F	5' 10"	155	98.7	73	18	122/82	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered
7	20	M	5' 11"	165	98.9	75	19	128/88	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered
8	21	F	5' 9"	145	98.6	72	17	118/78	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered
9	22	M	5' 12"	175	99.0	77	21	135/95	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered
10	23	F	5' 10"	160	98.8	74	19	125/85	Normal	Clear	Normal	Normal	Normal	Normal	Acute	Good	Rest, fluids	Recovered

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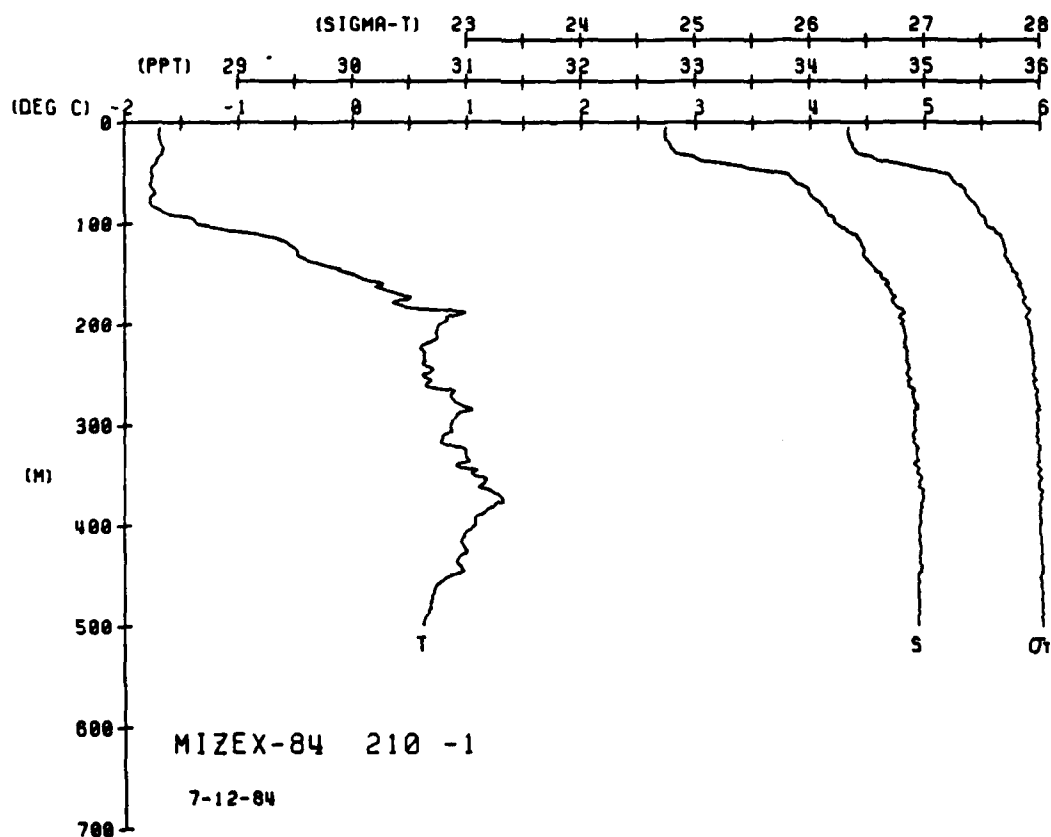
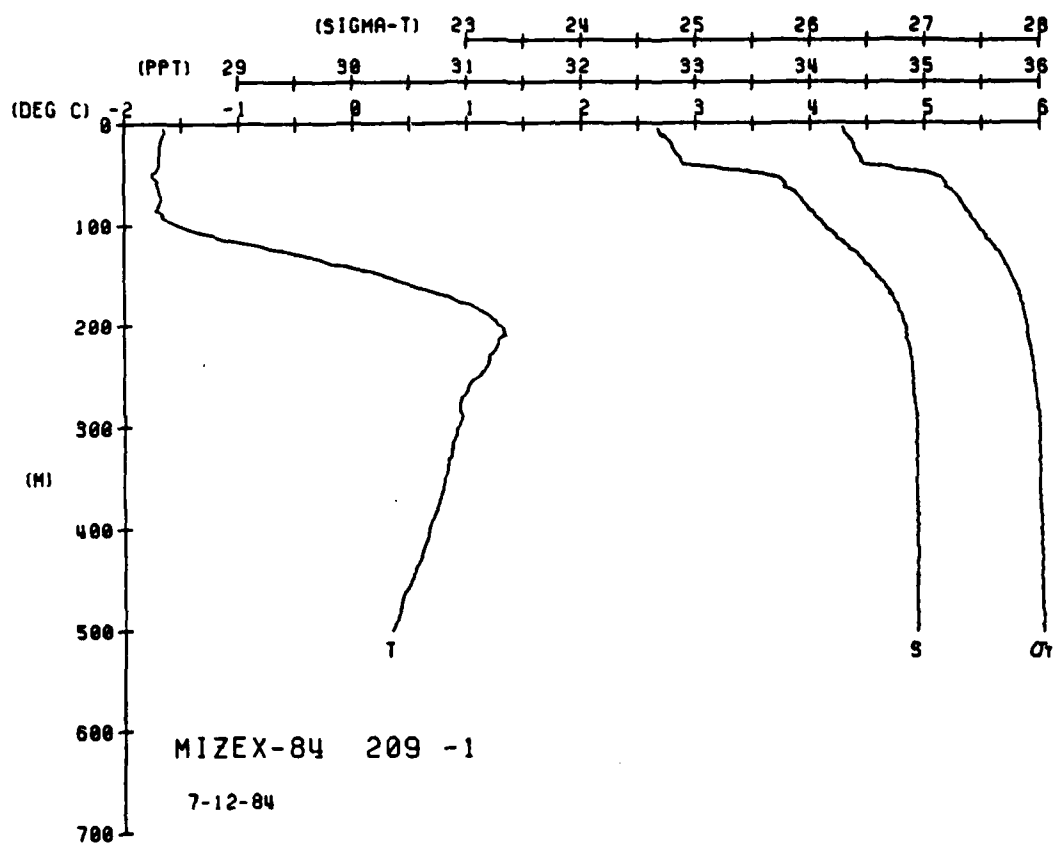
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100																																																																																																																																																																																								
1990	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.28	1.29	1.30	1.31	1.32	1.33	1.34	1.35	1.36	1.37	1.38	1.39	1.40	1.41	1.42	1.43	1.44	1.45	1.46	1.47	1.48	1.49	1.50	1.51	1.52	1.53	1.54	1.55	1.56	1.57	1.58	1.59	1.60	1.61	1.62	1.63	1.64	1.65	1.66	1.67	1.68	1.69	1.70	1.71	1.72	1.73	1.74	1.75	1.76	1.77	1.78	1.79	1.80	1.81	1.82	1.83	1.84	1.85	1.86	1.87	1.88	1.89	1.90	1.91	1.92	1.93	1.94	1.95	1.96	1.97	1.98	1.99	2.00	2.01	2.02	2.03	2.04	2.05	2.06	2.07	2.08	2.09	2.10	2.11	2.12	2.13	2.14	2.15	2.16	2.17	2.18	2.19	2.20	2.21	2.22	2.23	2.24	2.25	2.26	2.27	2.28	2.29	2.30	2.31	2.32	2.33	2.34	2.35	2.36	2.37	2.38	2.39	2.40	2.41	2.42	2.43	2.44	2.45	2.46	2.47	2.48	2.49	2.50	2.51	2.52	2.53	2.54	2.55	2.56	2.57	2.58	2.59	2.60	2.61	2.62	2.63	2.64	2.65	2.66	2.67	2.68	2.69	2.70	2.71	2.72	2.73	2.74	2.75	2.76	2.77	2.78	2.79	2.80	2.81	2.82	2.83	2.84	2.85	2.86	2.87	2.88	2.89	2.90	2.91	2.92	2.93	2.94	2.95	2.96	2.97	2.98	2.99	3.00	3.01	3.02	3.03	3.04	3.05	3.06	3.07	3.08	3.09	3.10	3.11	3.12	3.13	3.14	3.15	3.16	3.17	3.18	3.19	3.20	3.21	3.22	3.23	3.24	3.25	3.26	3.27	3.28	3.29	3.30	3.31	3.32	3.33	3.34	3.35	3.36	3.37	3.38	3.39	3.40	3.41	3.42	3.43	3.44	3.45	3.46	3.47	3.48	3.49	3.50	3.51	3.52	3.53	3.54	3.55	3.56	3.57	3.58	3.59	3.60	3.61	3.62	3.63	3.64	3.65	3.66	3.67	3.68	3.69	3.70	3.71	3.72	3.73	3.74	3.75	3.76	3.77	3.78	3.79	3.80	3.81	3.82	3.83	3.84	3.85	3.86	3.87	3.88	3.89	3.90	3.91	3.92	3.93	3.94	3.95	3.96	3.97	3.98	3.99	4.00	4.01	4.02	4.03	4.04	4.05	4.06	4.07	4.08	4.09	4.10	4.11	4.12	4.13	4

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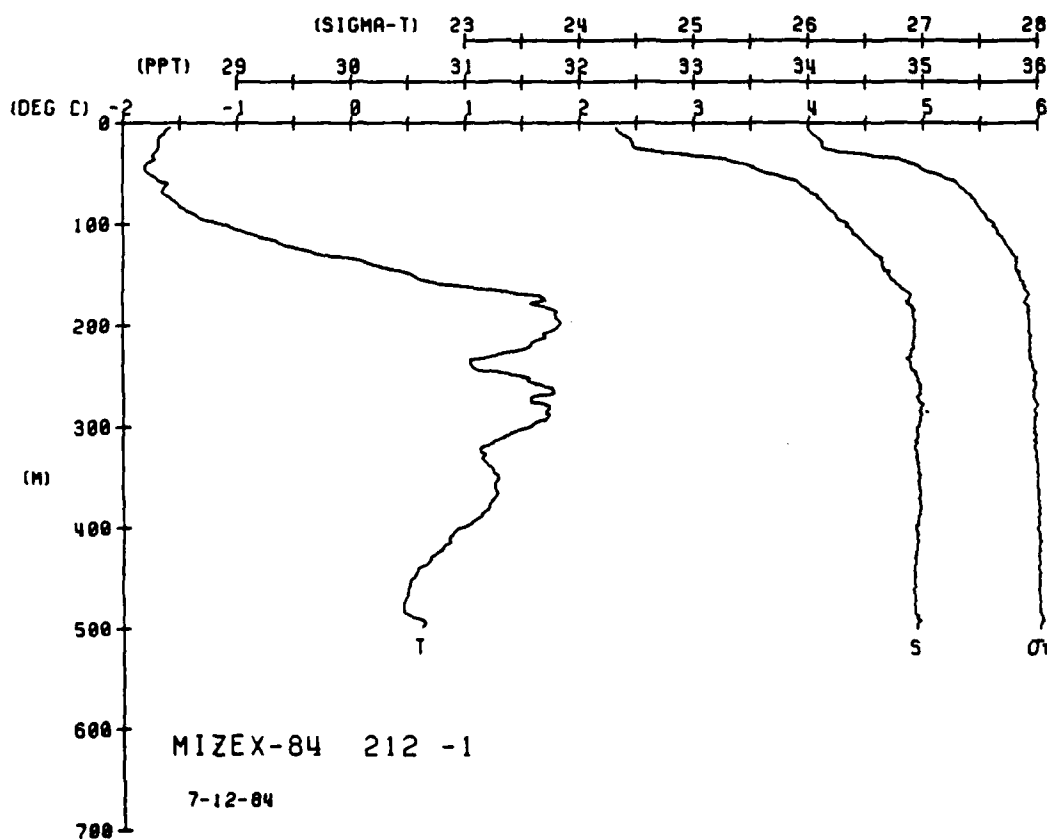
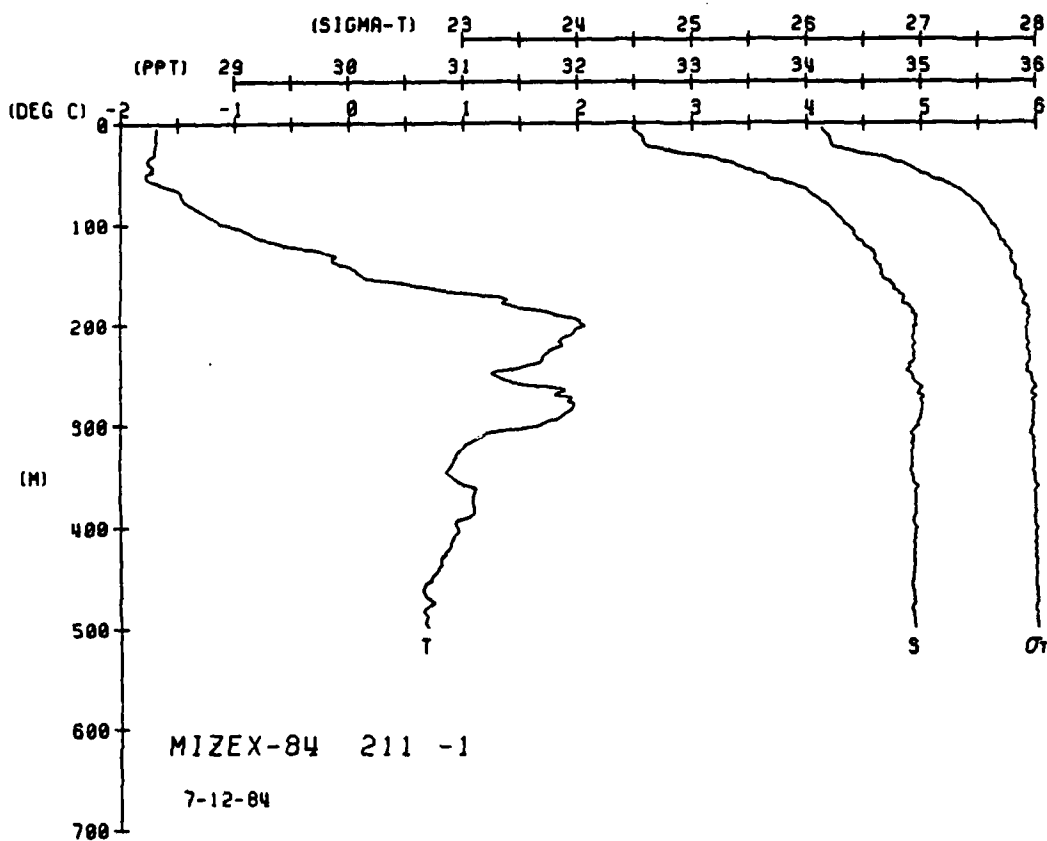
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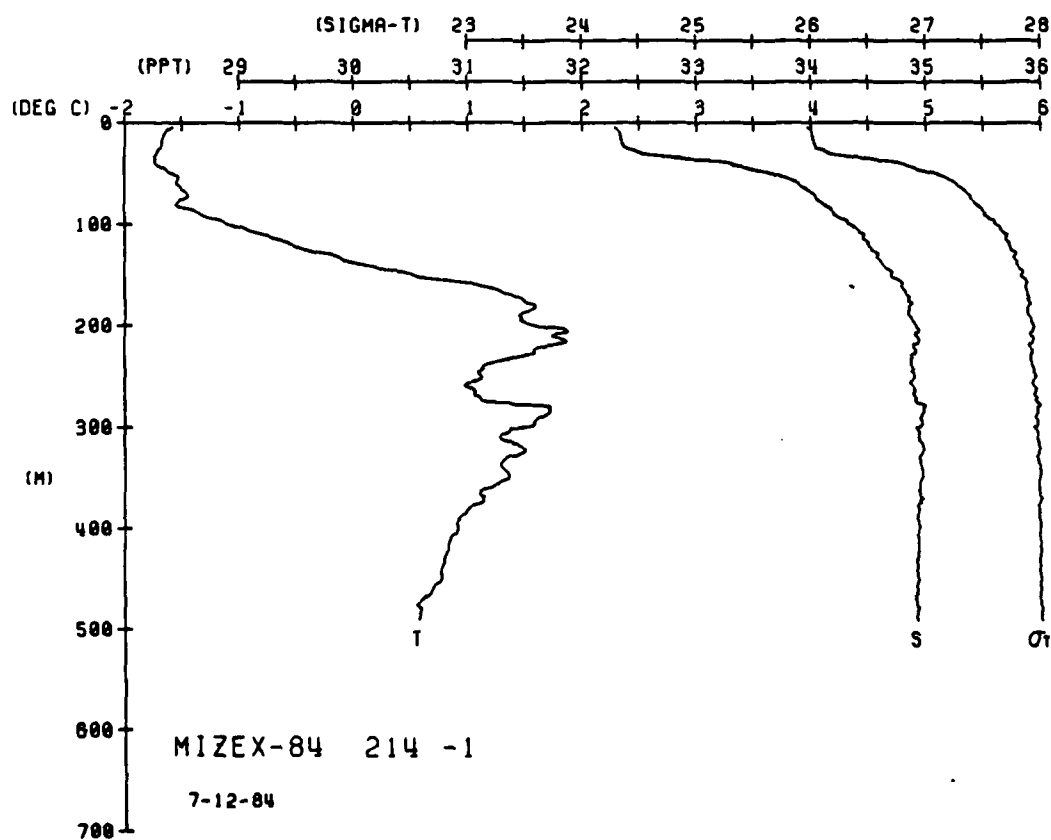
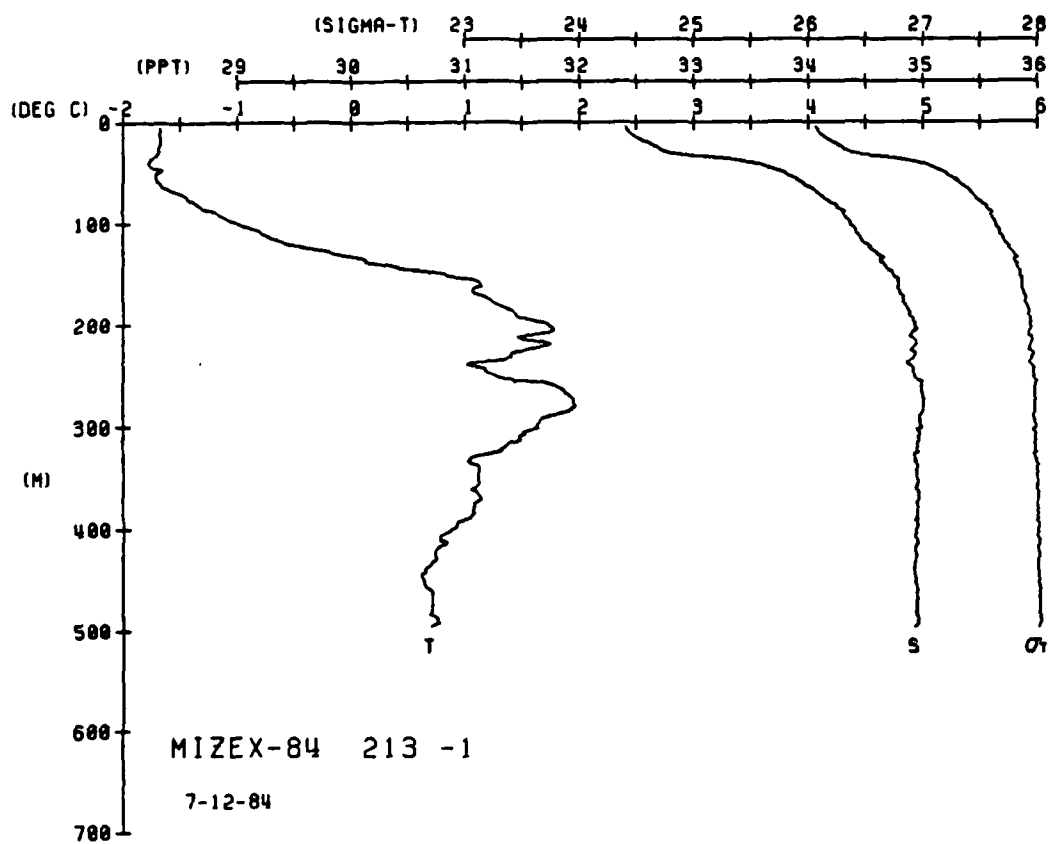
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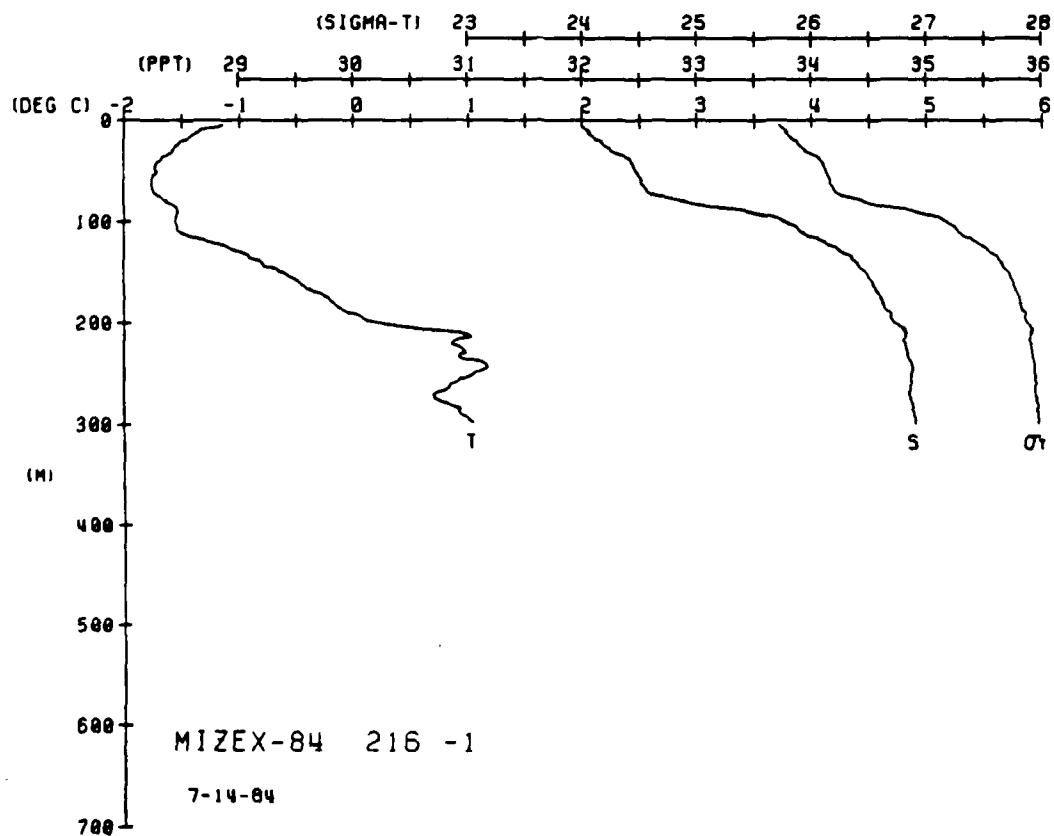
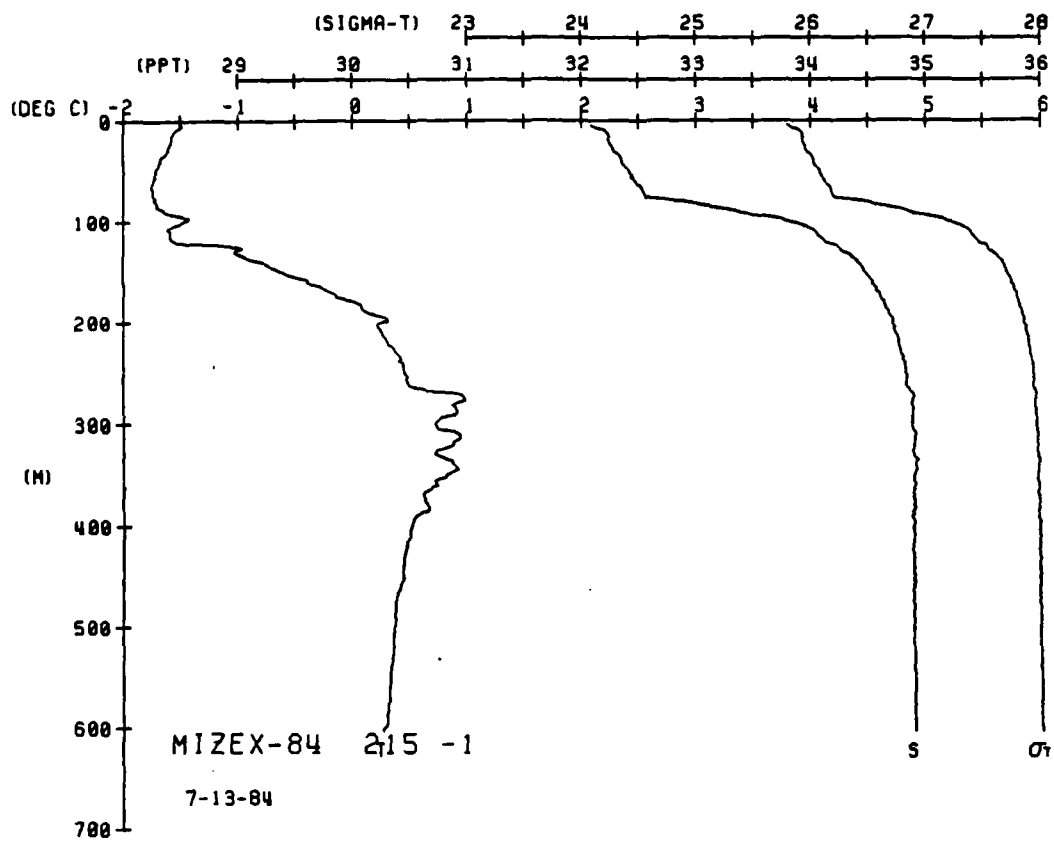
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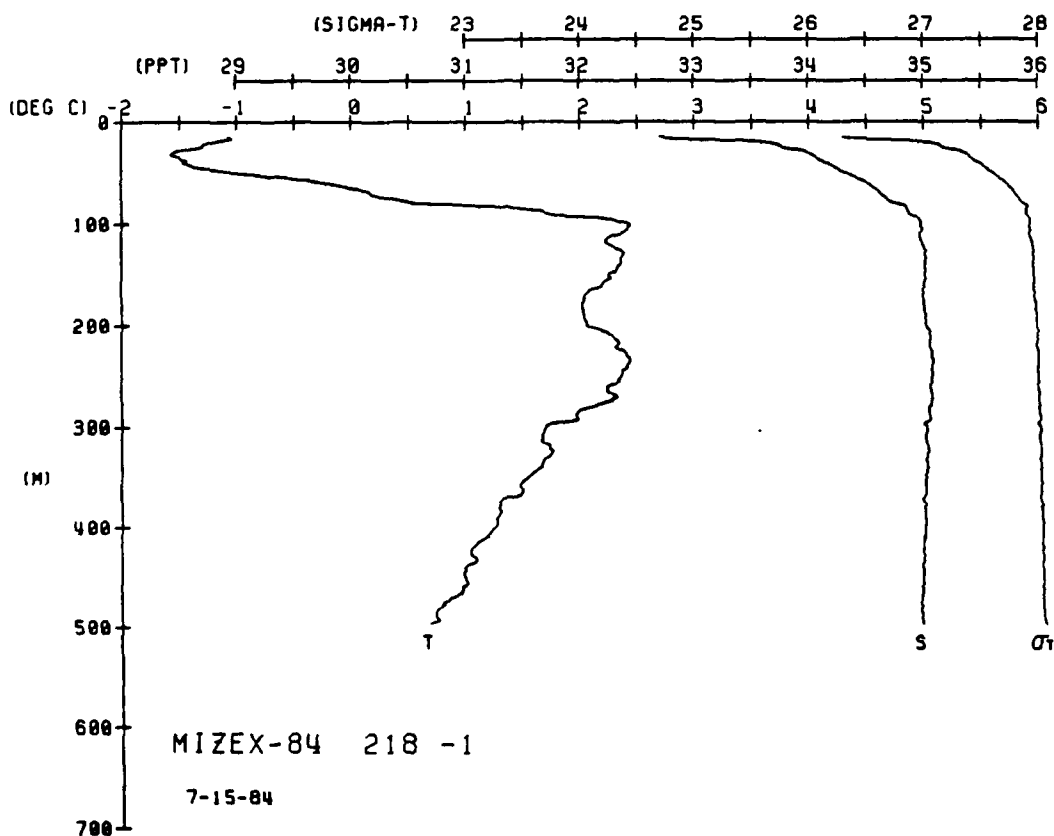
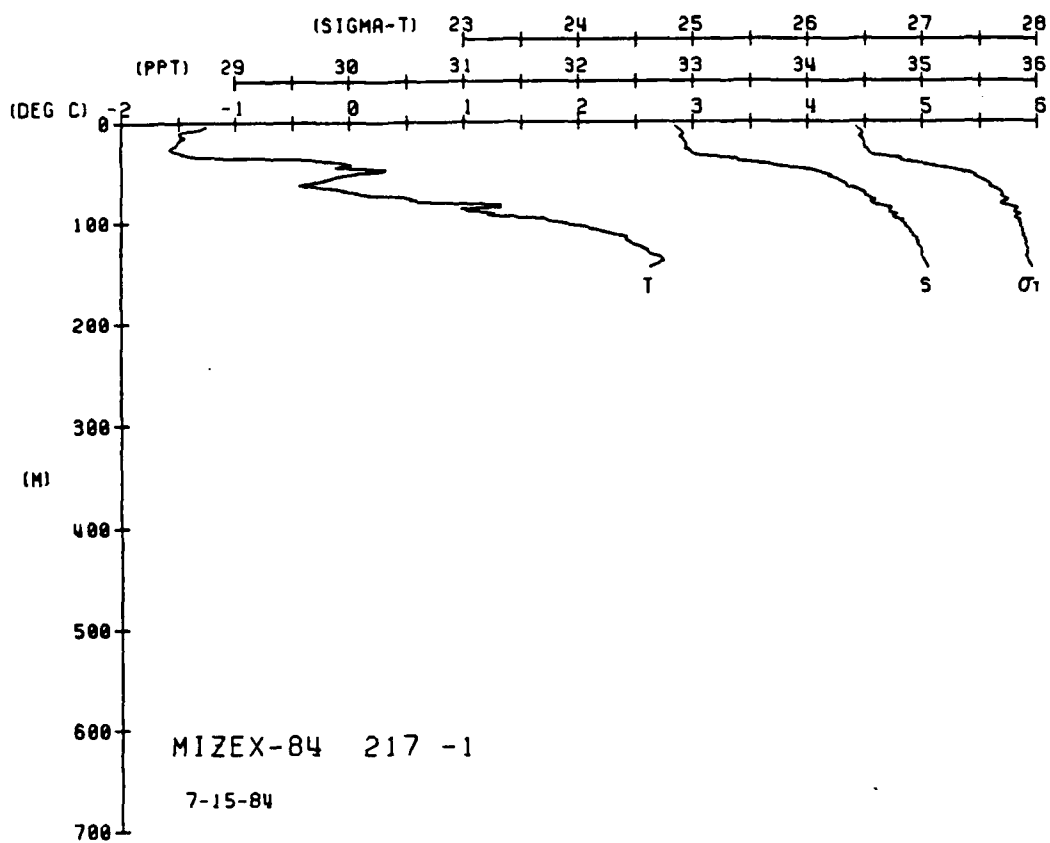


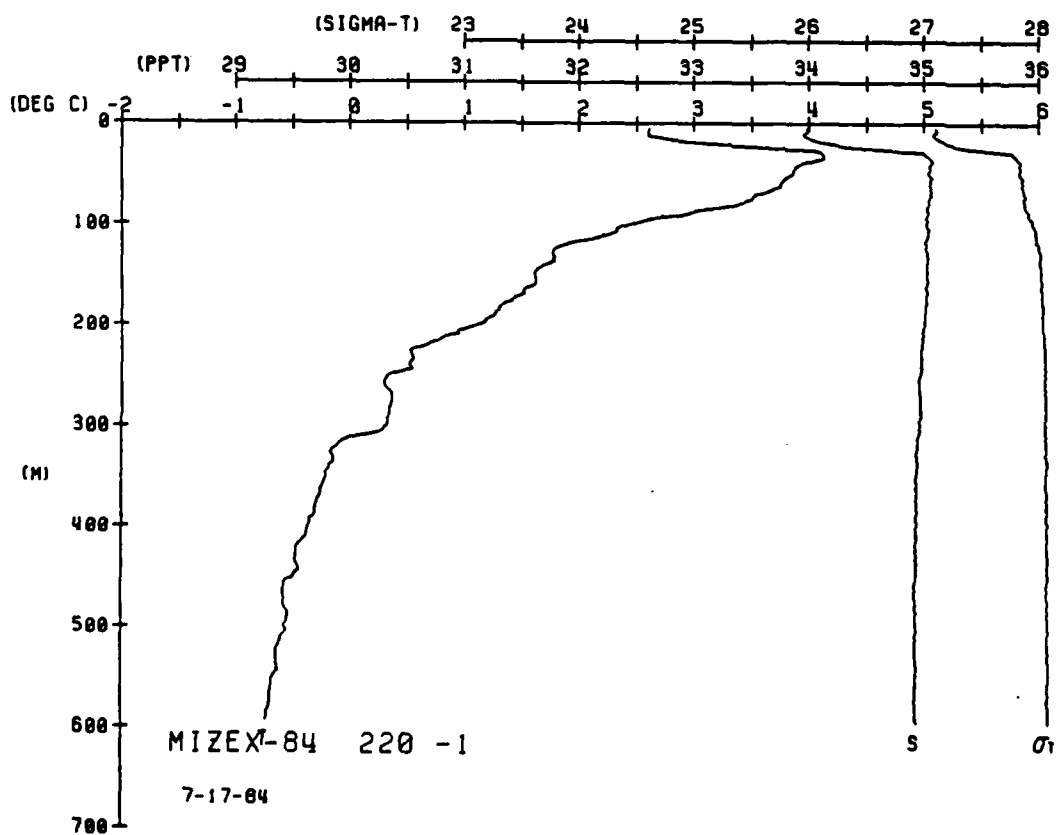
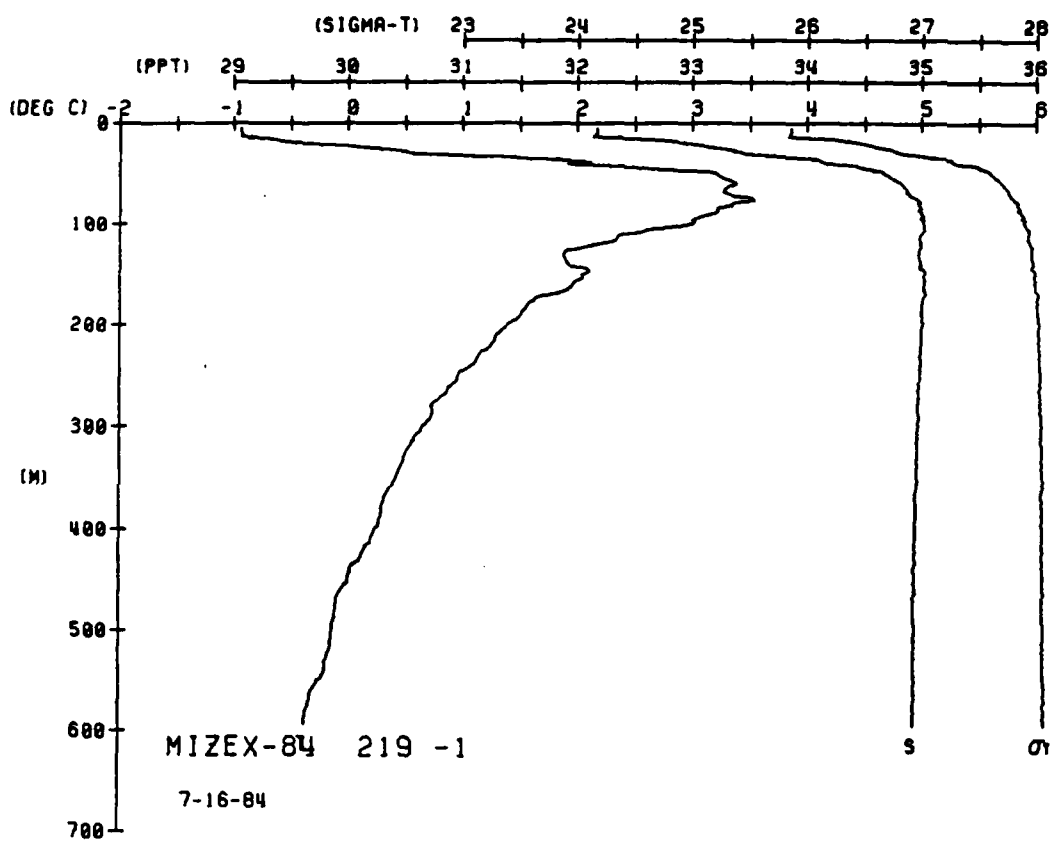
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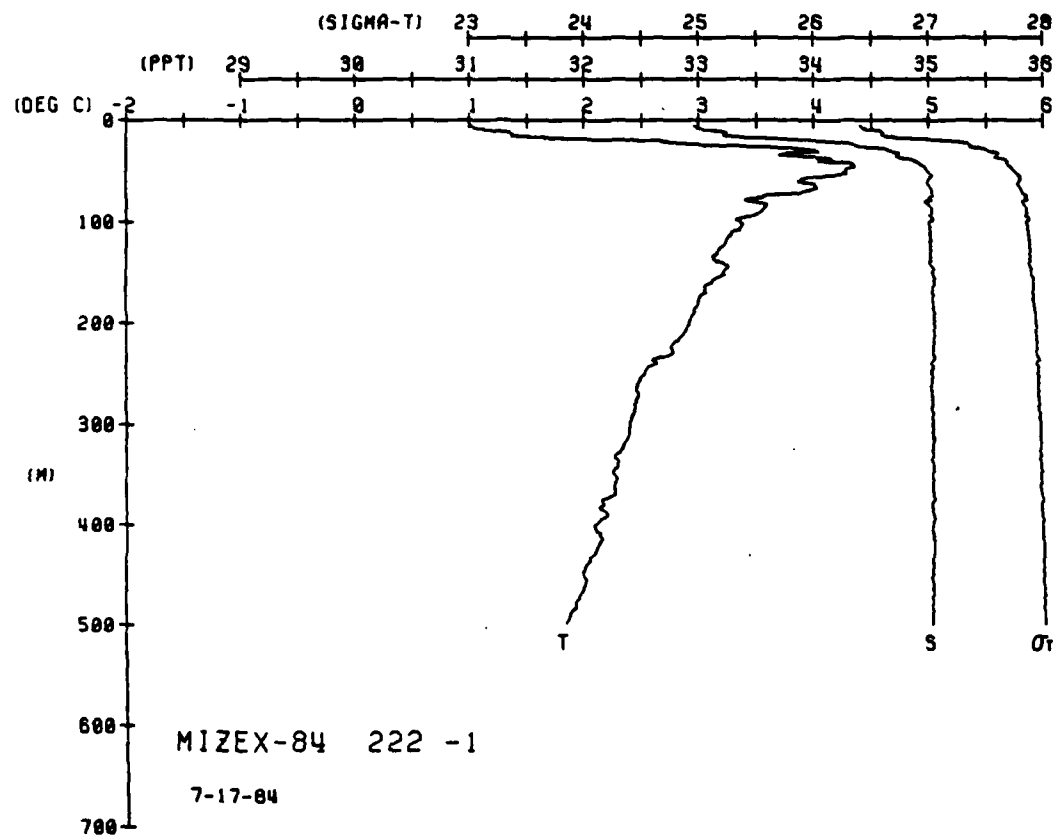
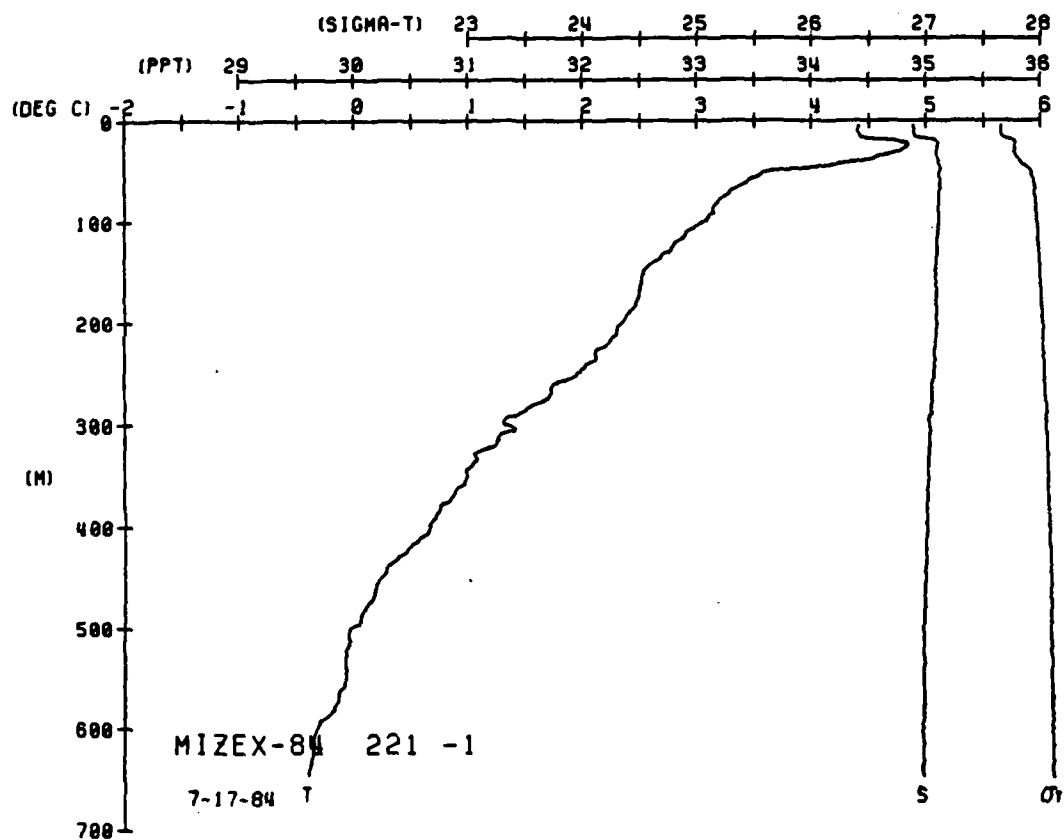








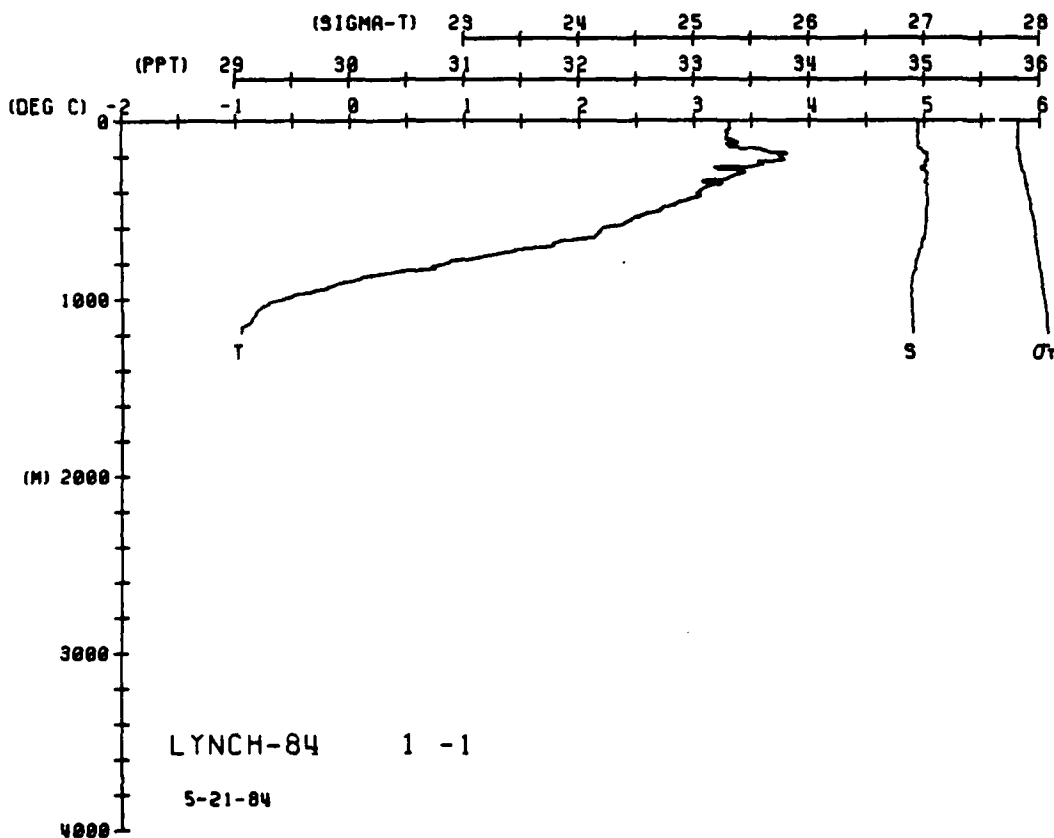
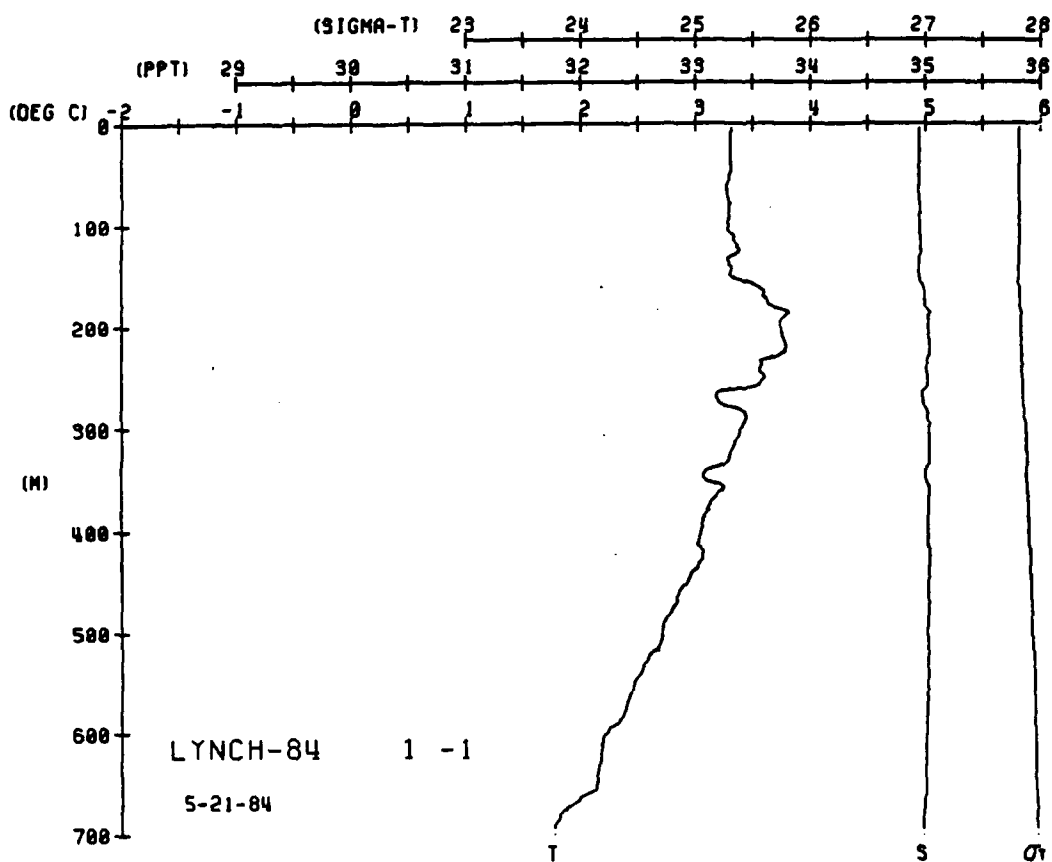


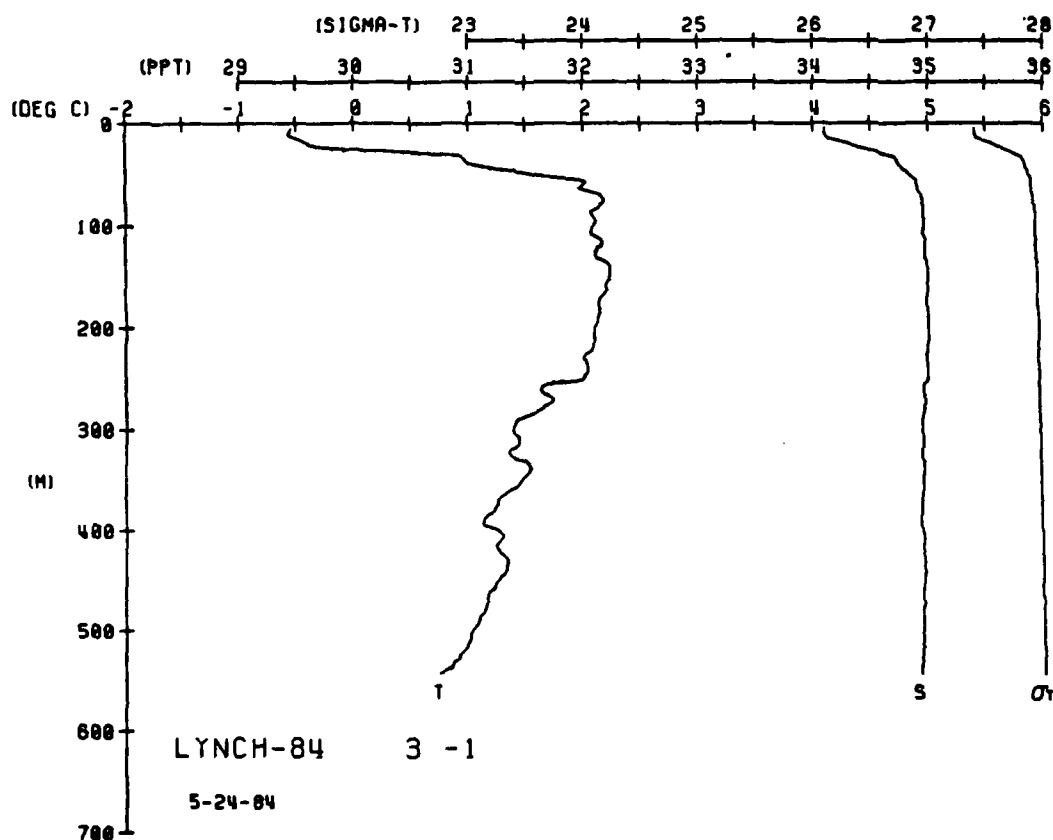
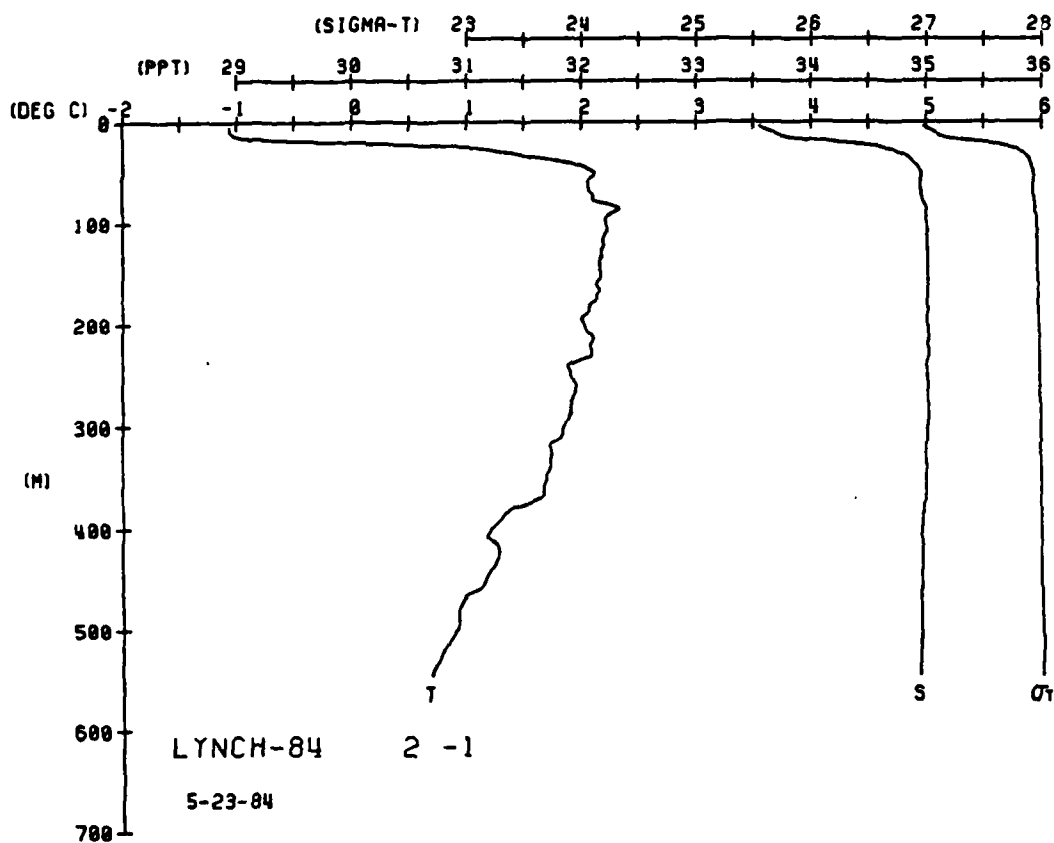


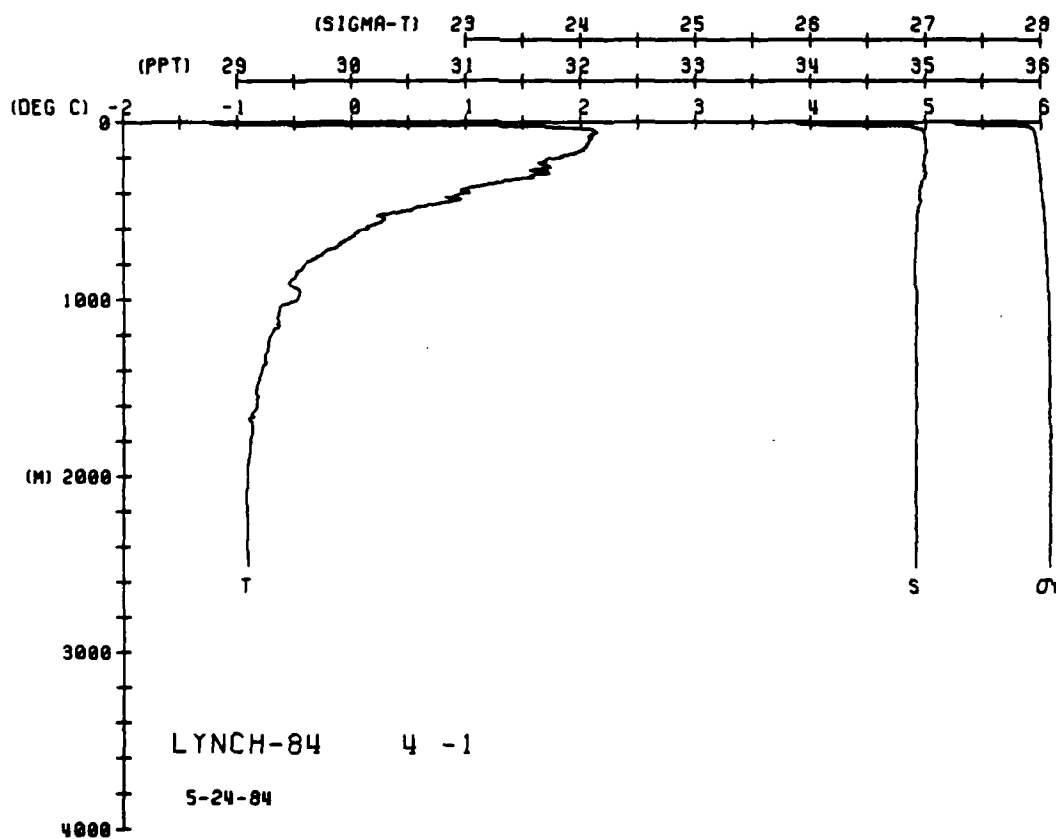
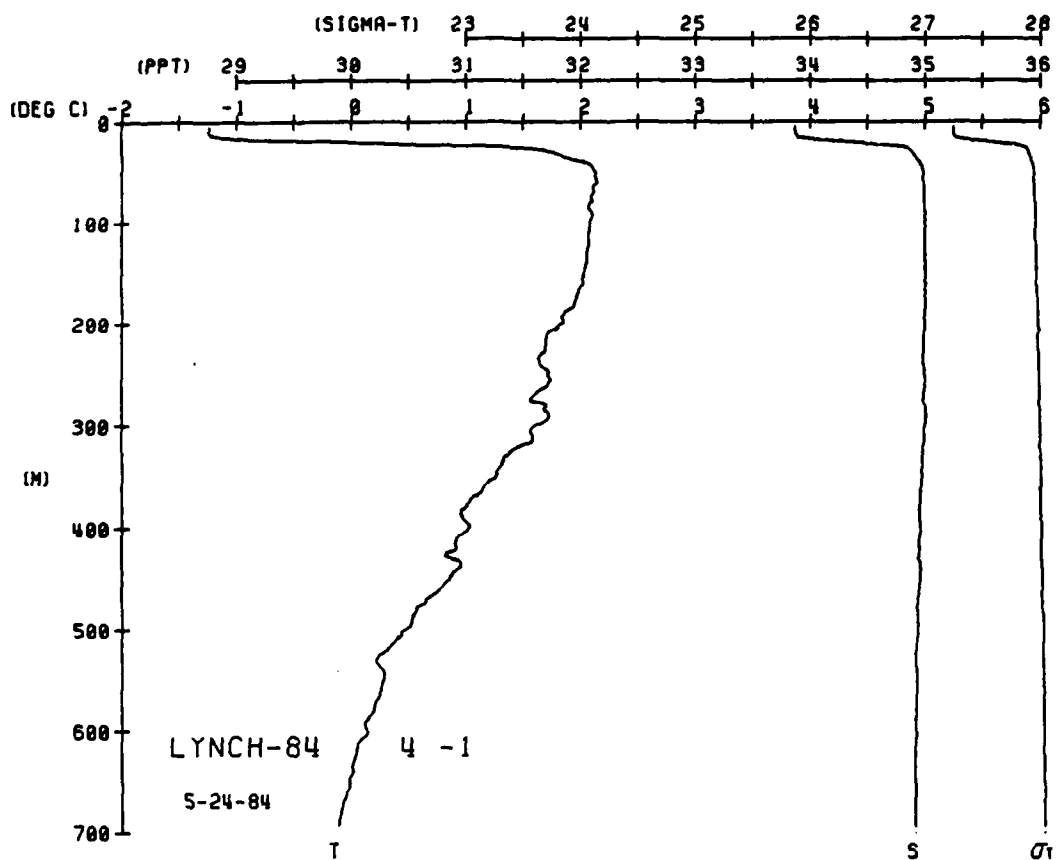
STD DATA

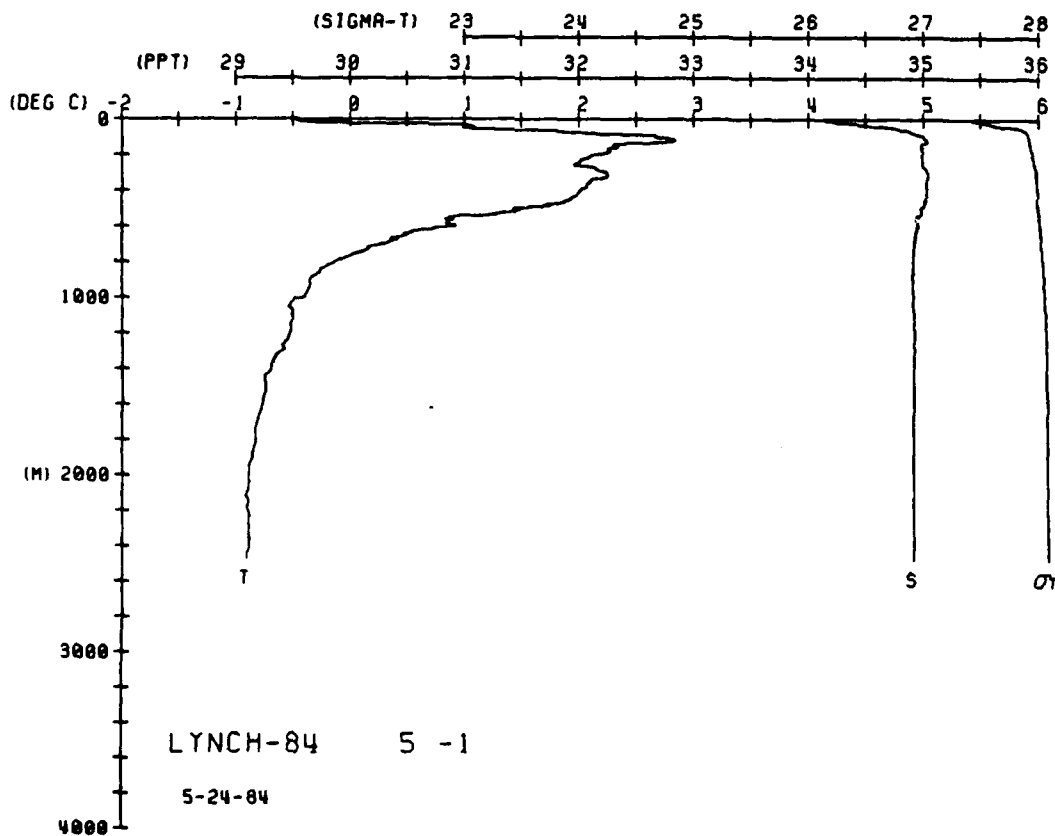
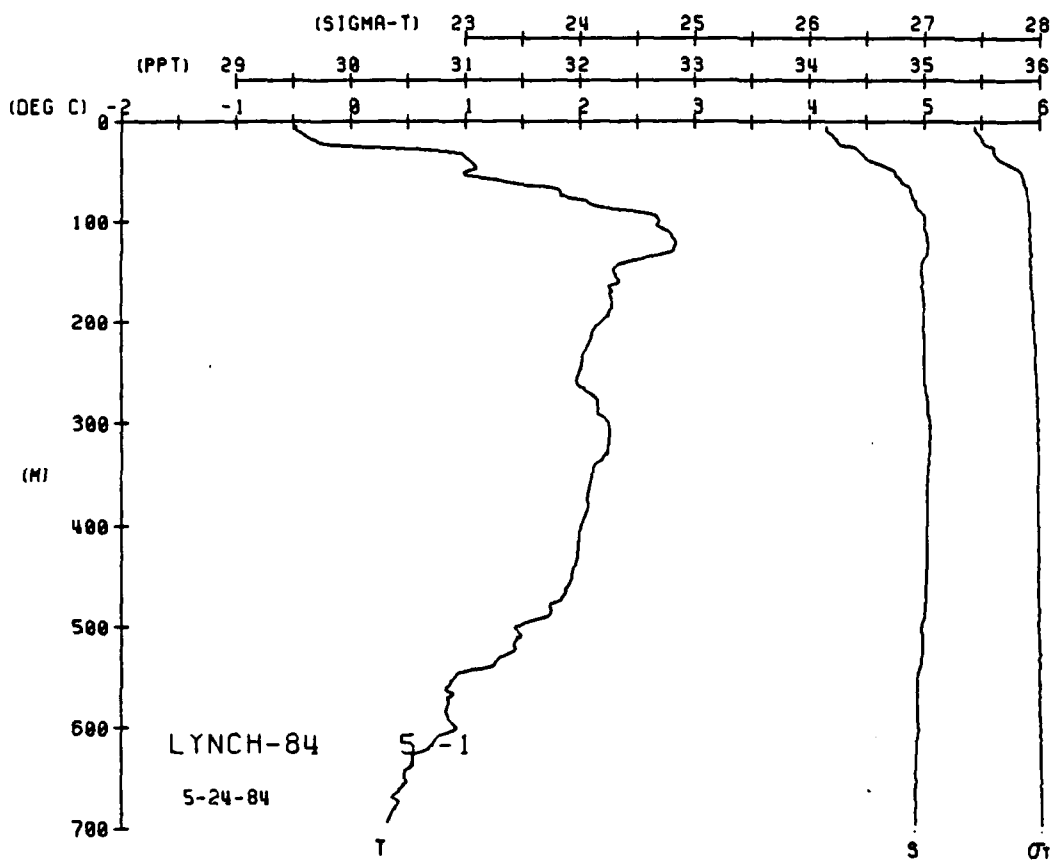
The section provides all of the data taken on the USNS Lynch.

The numerical listing and corresponding
plots are given.



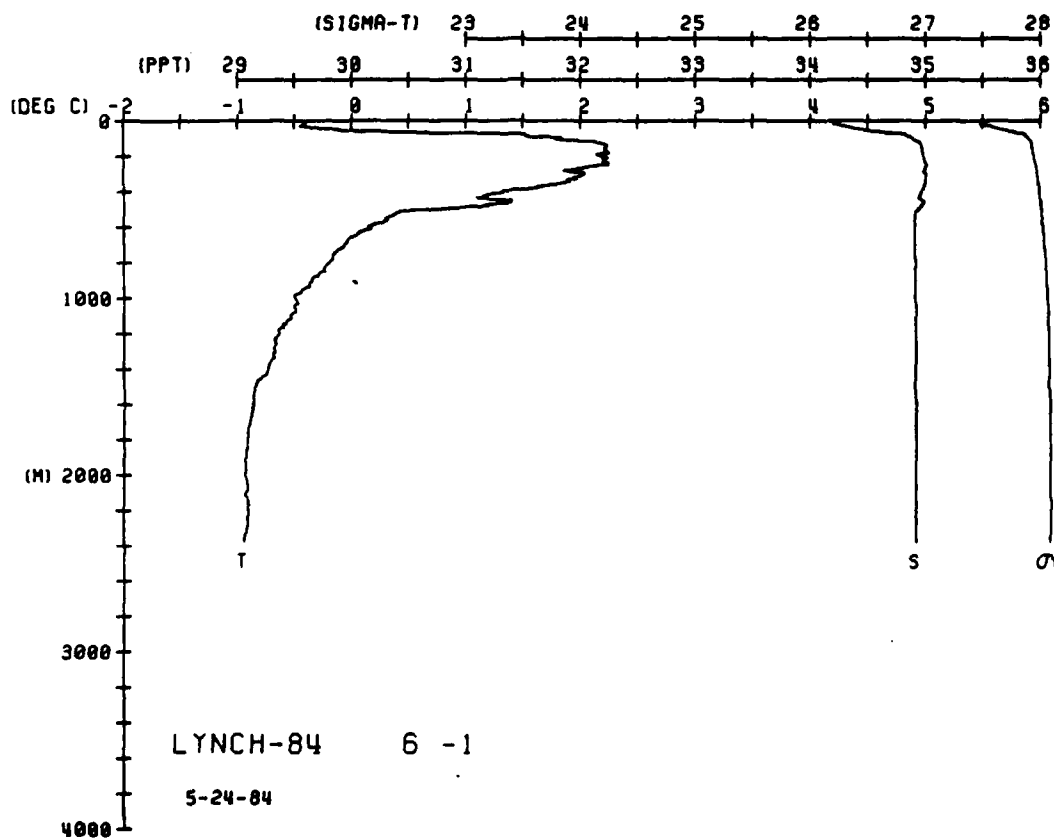
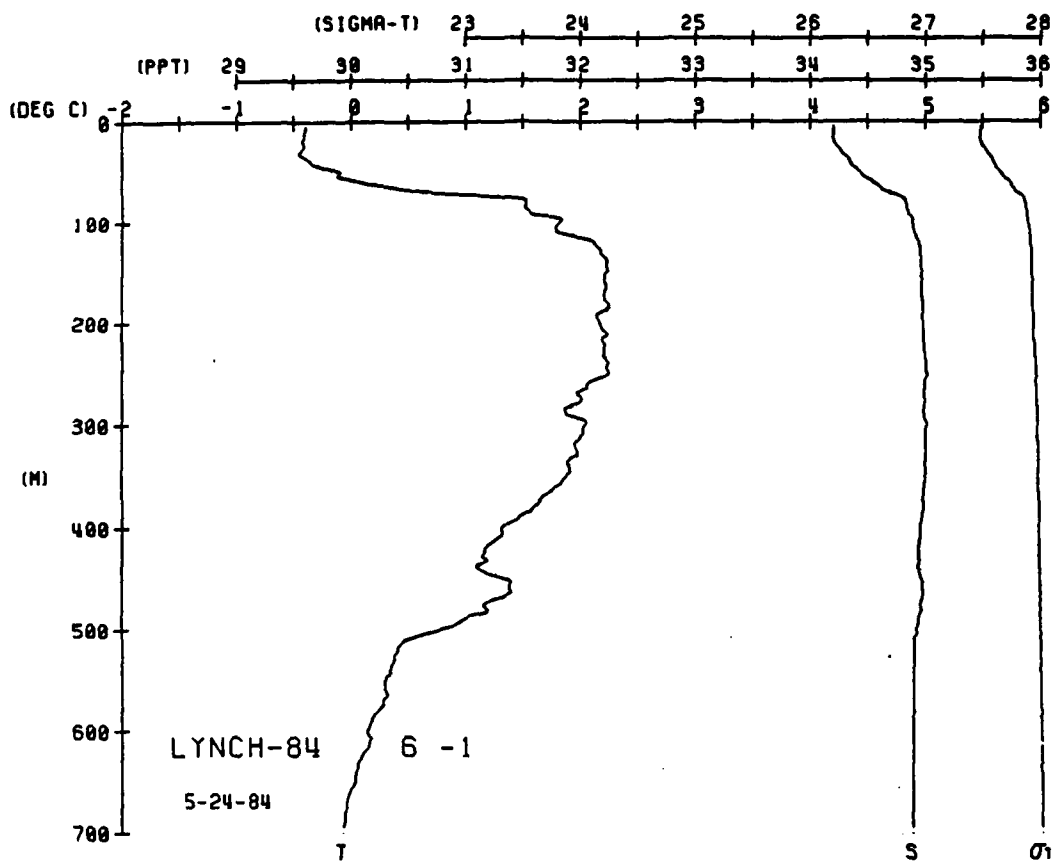


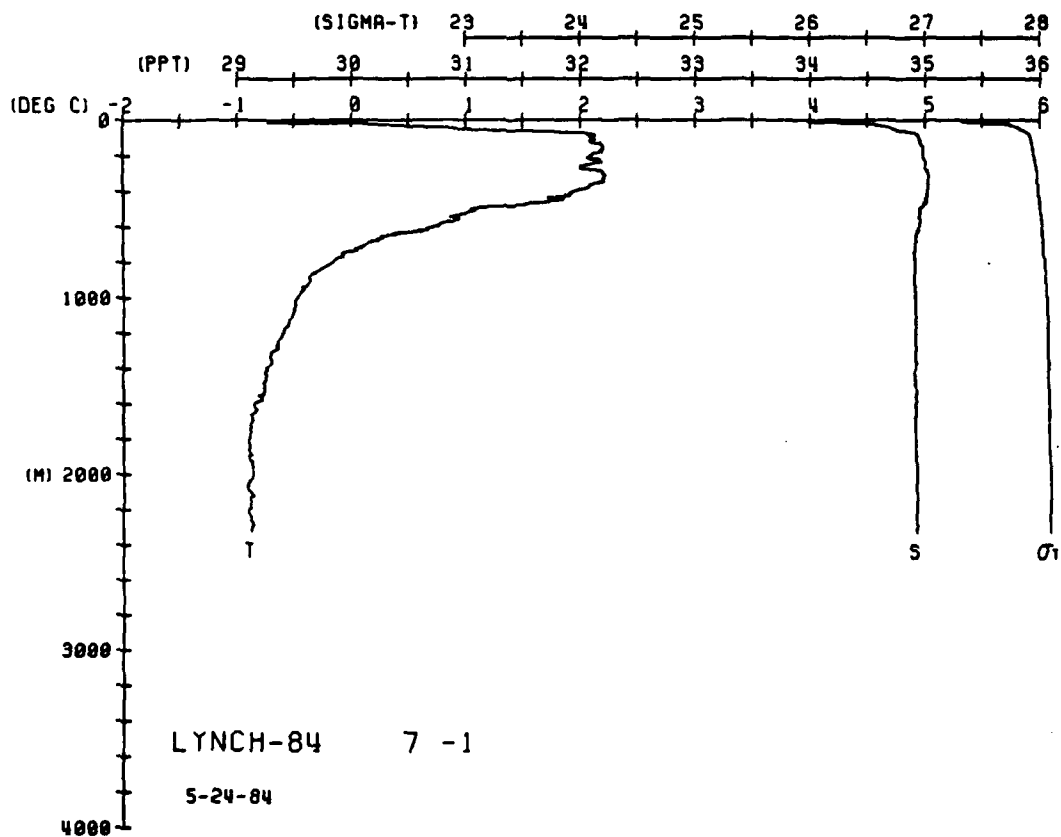
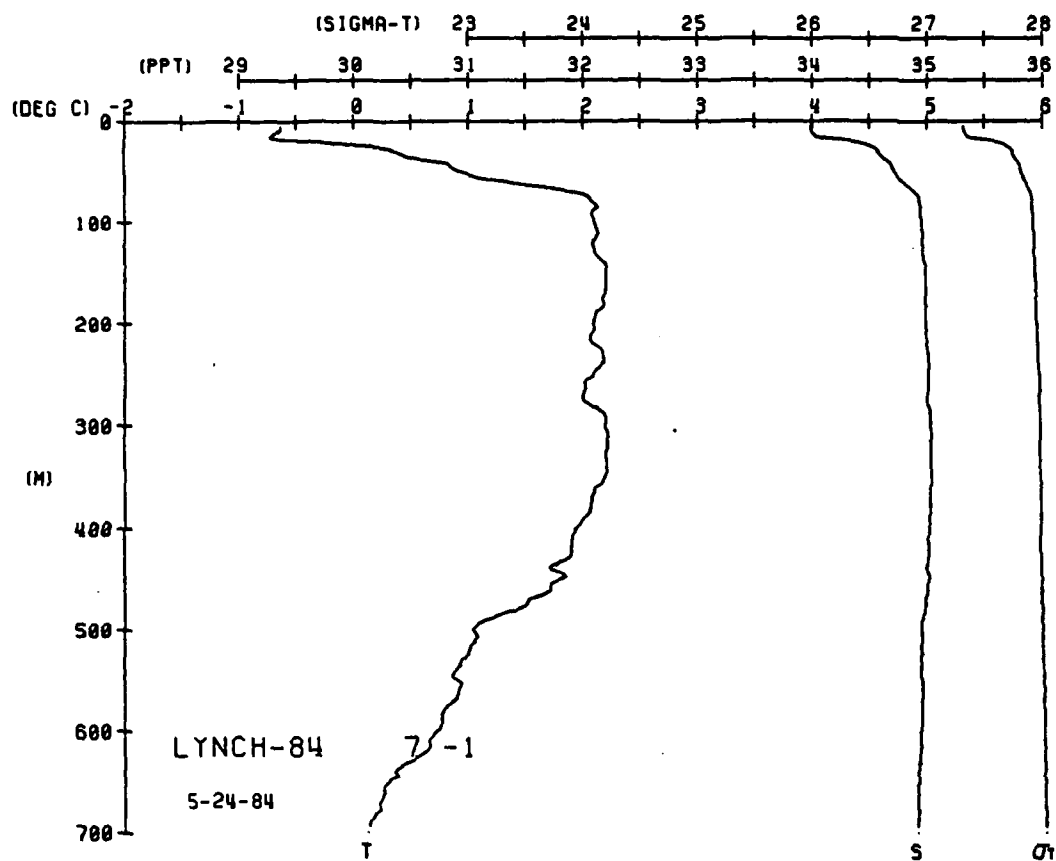




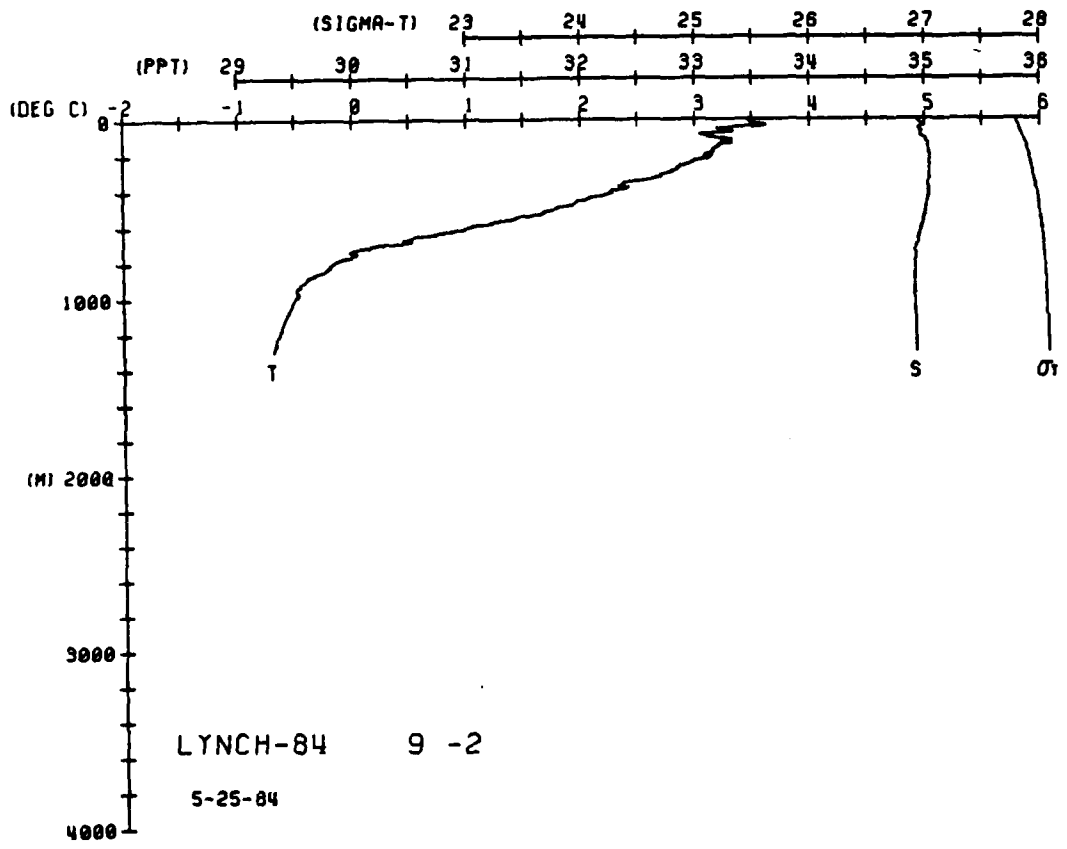
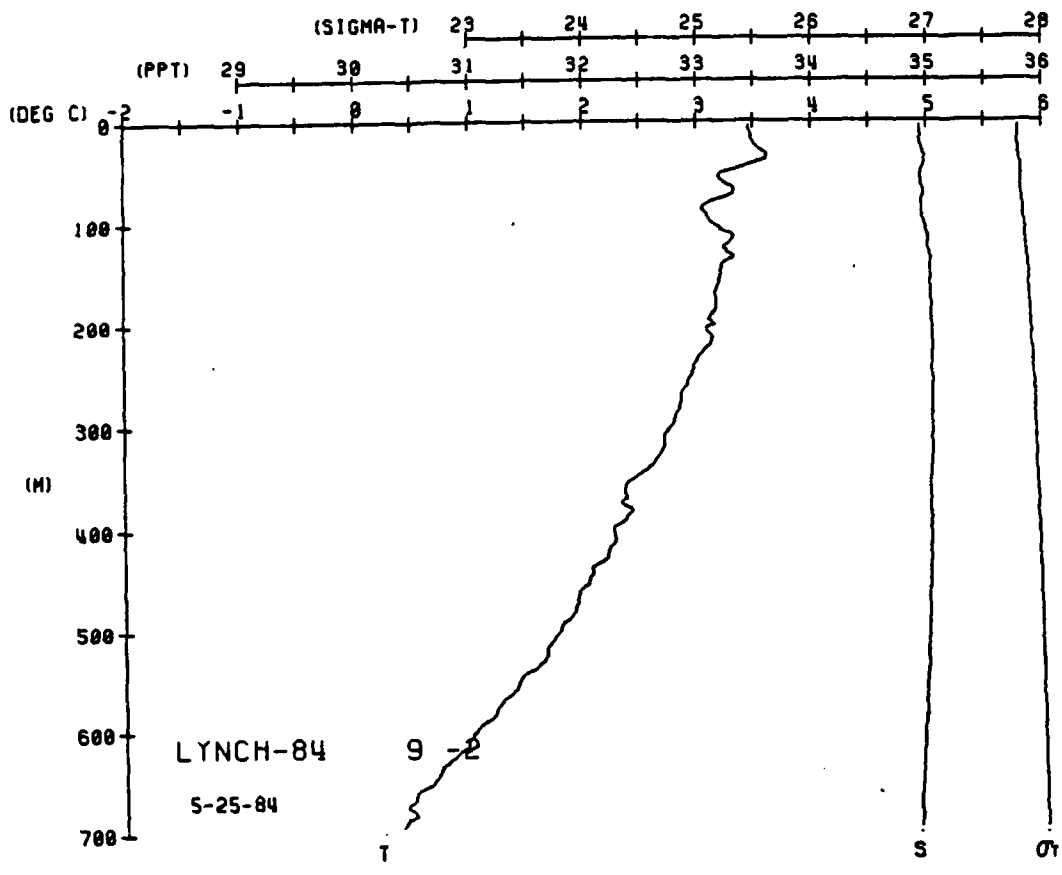
LYNCH-84 STATION 6(1) CTD 24/MAY/1984
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[illegible]



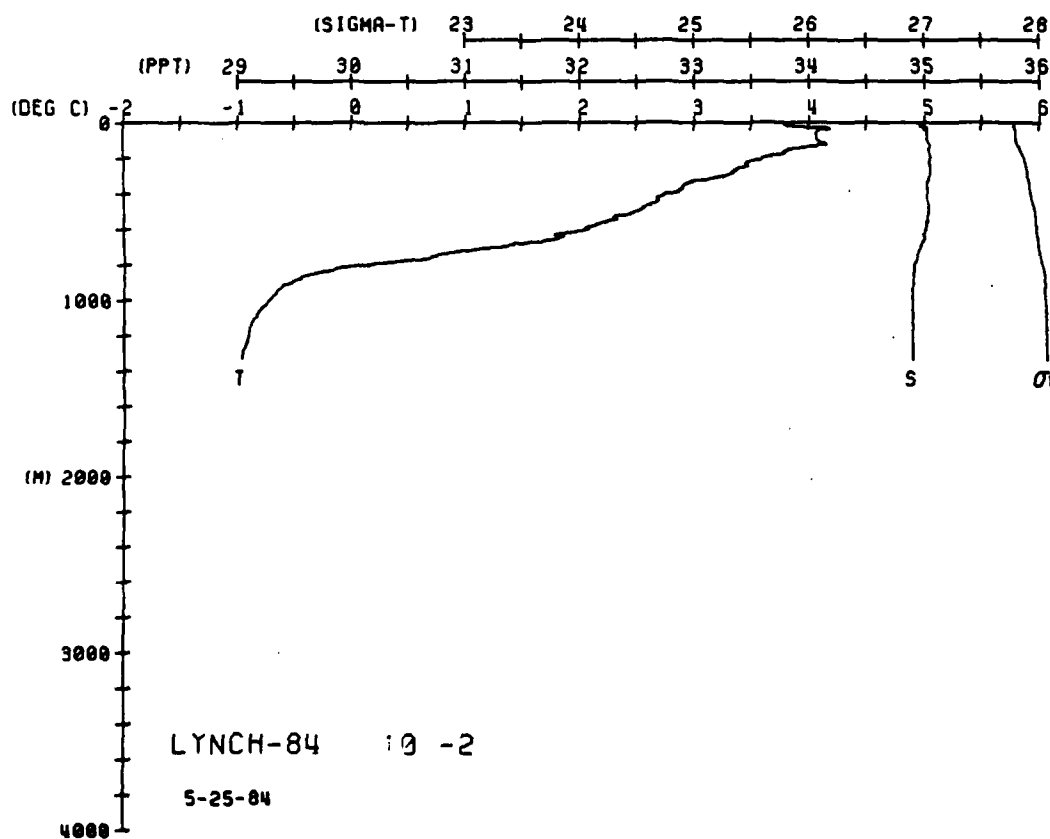
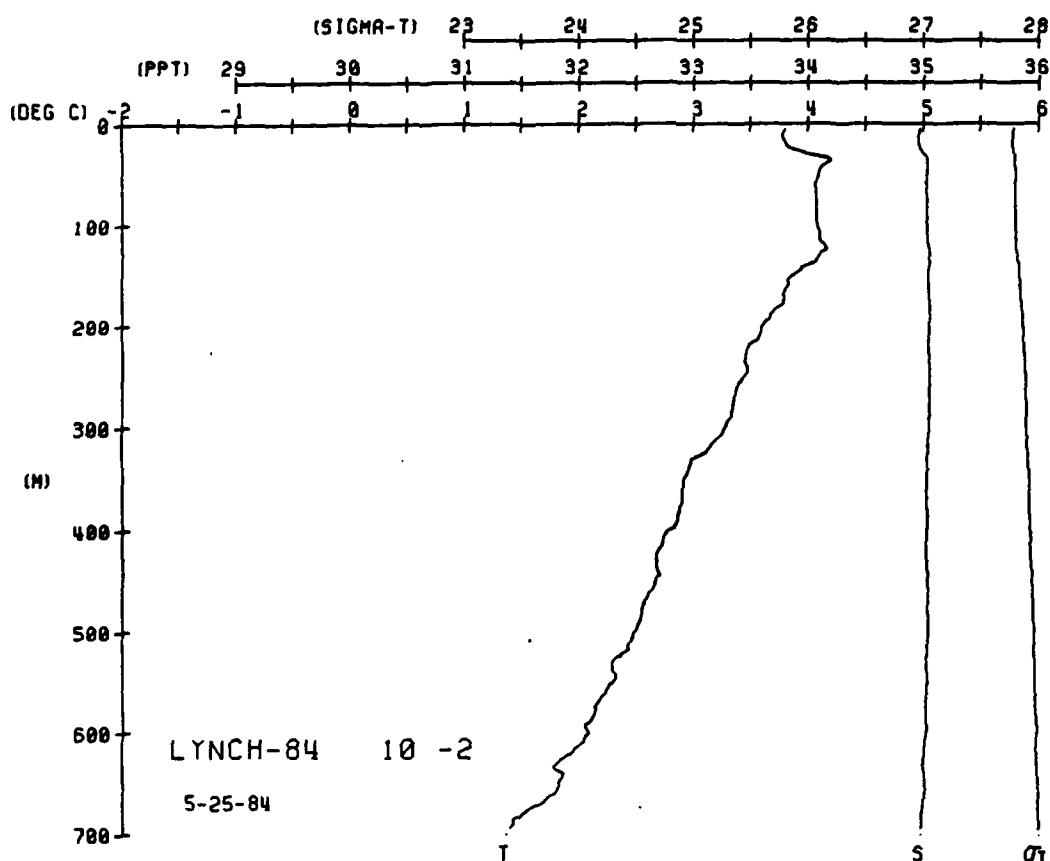


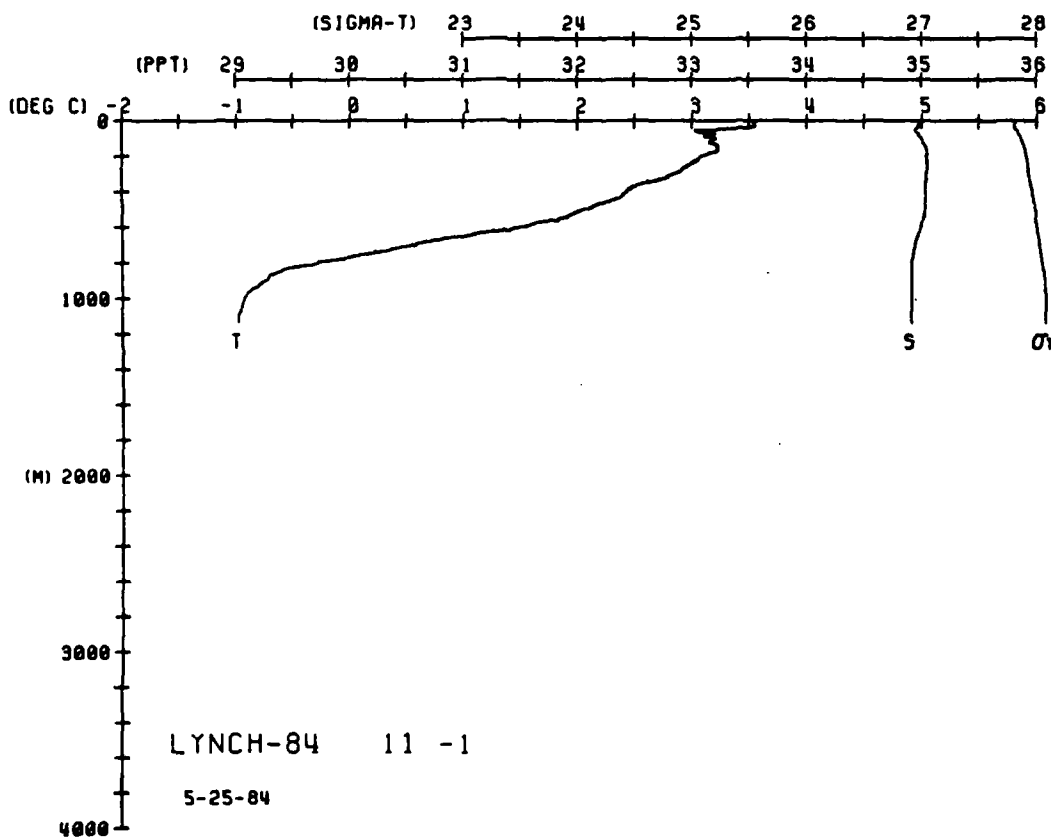
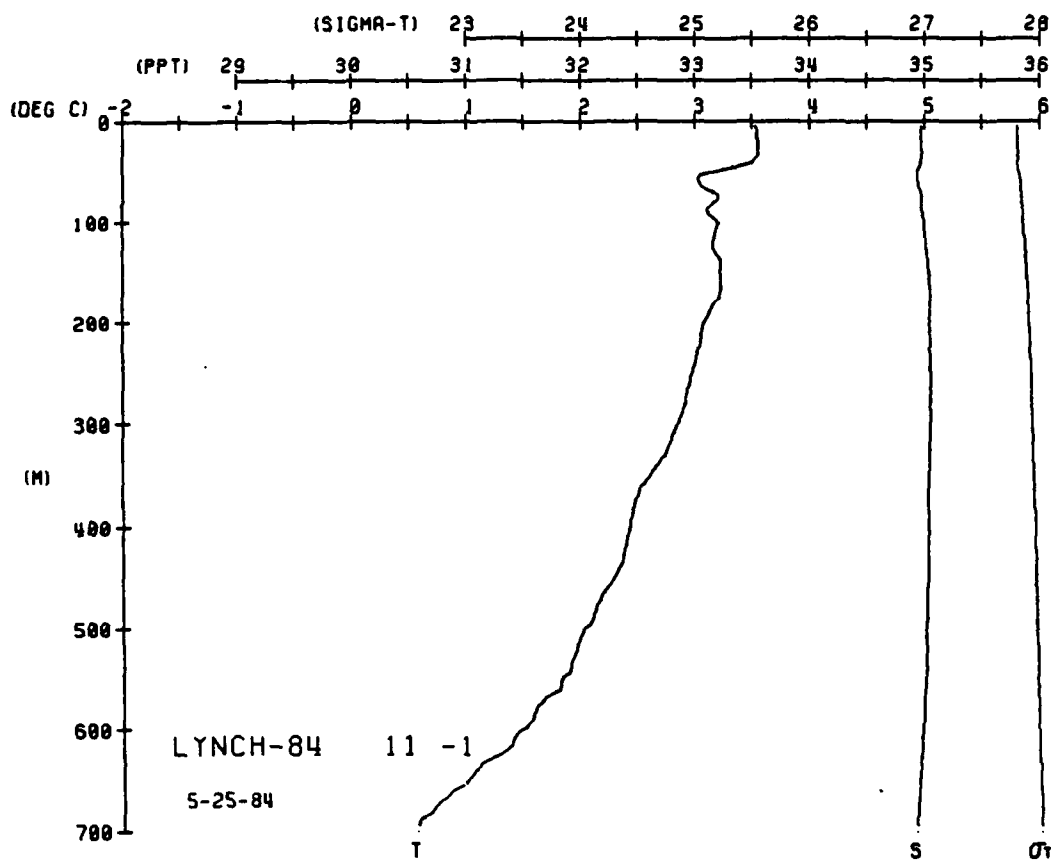
[illegible]



LYNCH-04 STATION 10(2) CTD 25/MAY/1984
LAT = 78.9528N LNG = 6.4820E LTR =
AIR TEMP = 0.0 BARON = 0.0 WIND =

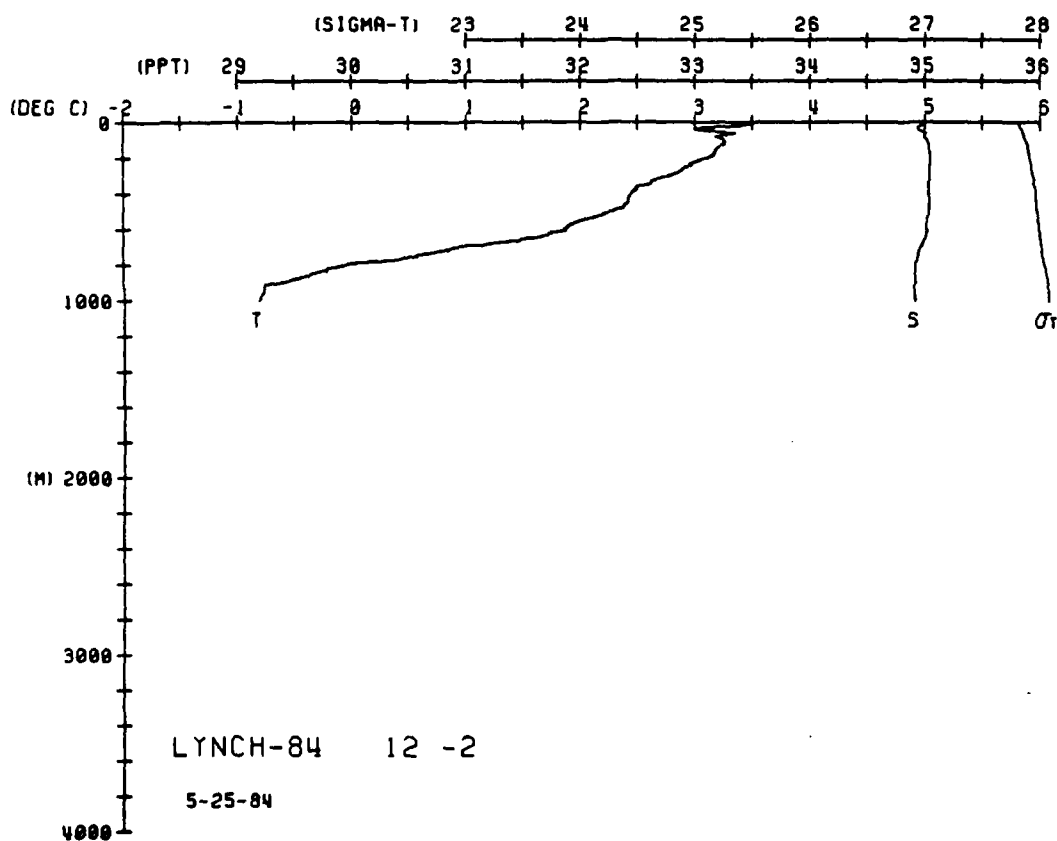
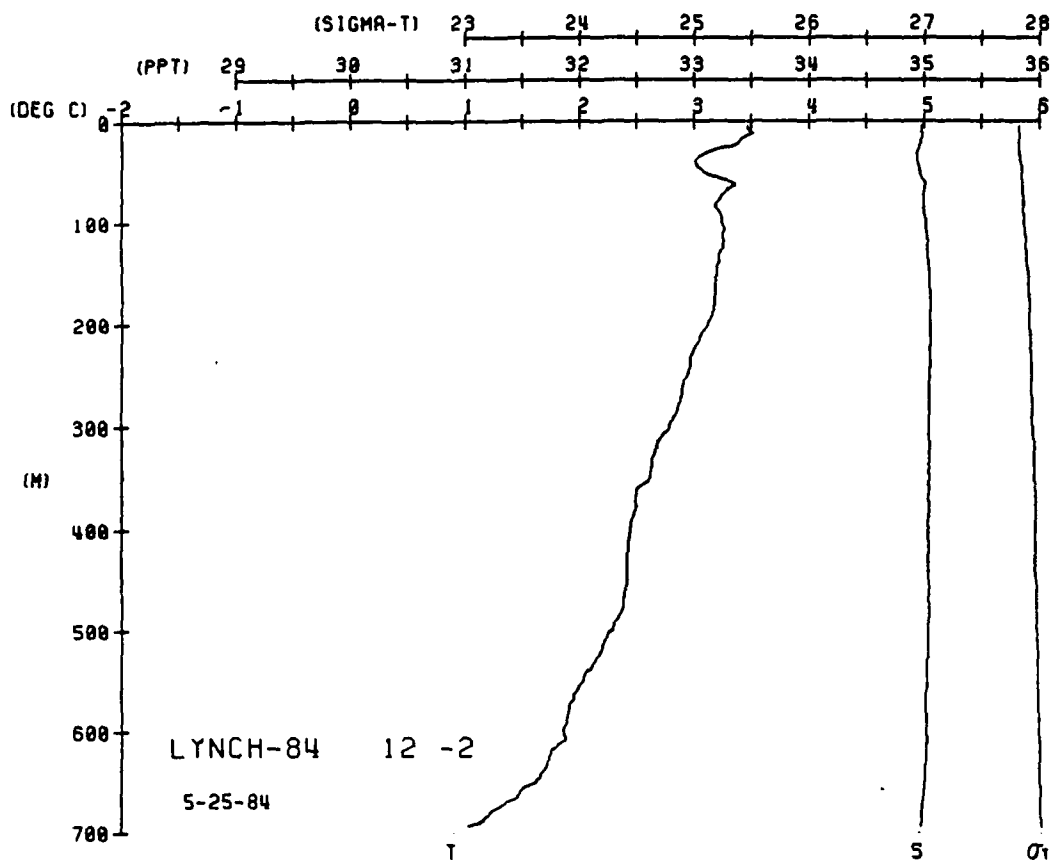
[illegible][illegible]





LYNCH-84 STATION 12(2) CTD 25/MAY/1984 1125 GMT CUDE = 5
LAT = 78.9328N LNG = 0.0428E LTER = 30.0
AIR TEMP = 0.0 BAHOM = 0.0 WIND = 0.0

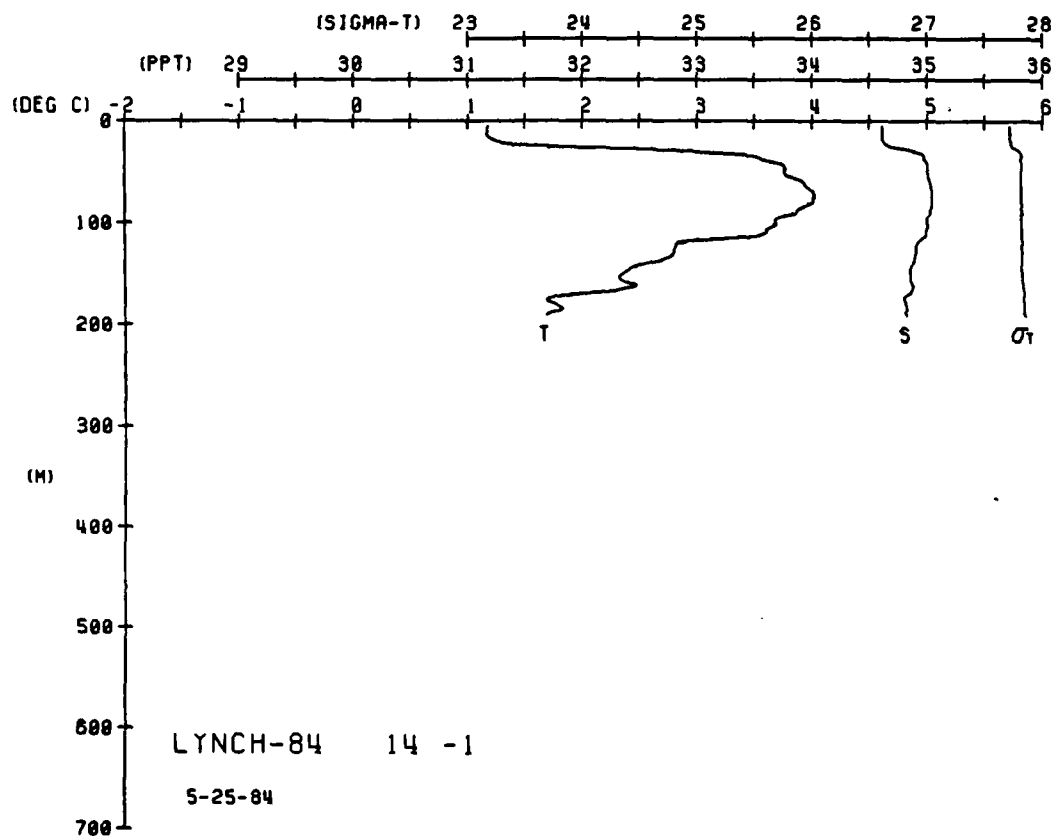
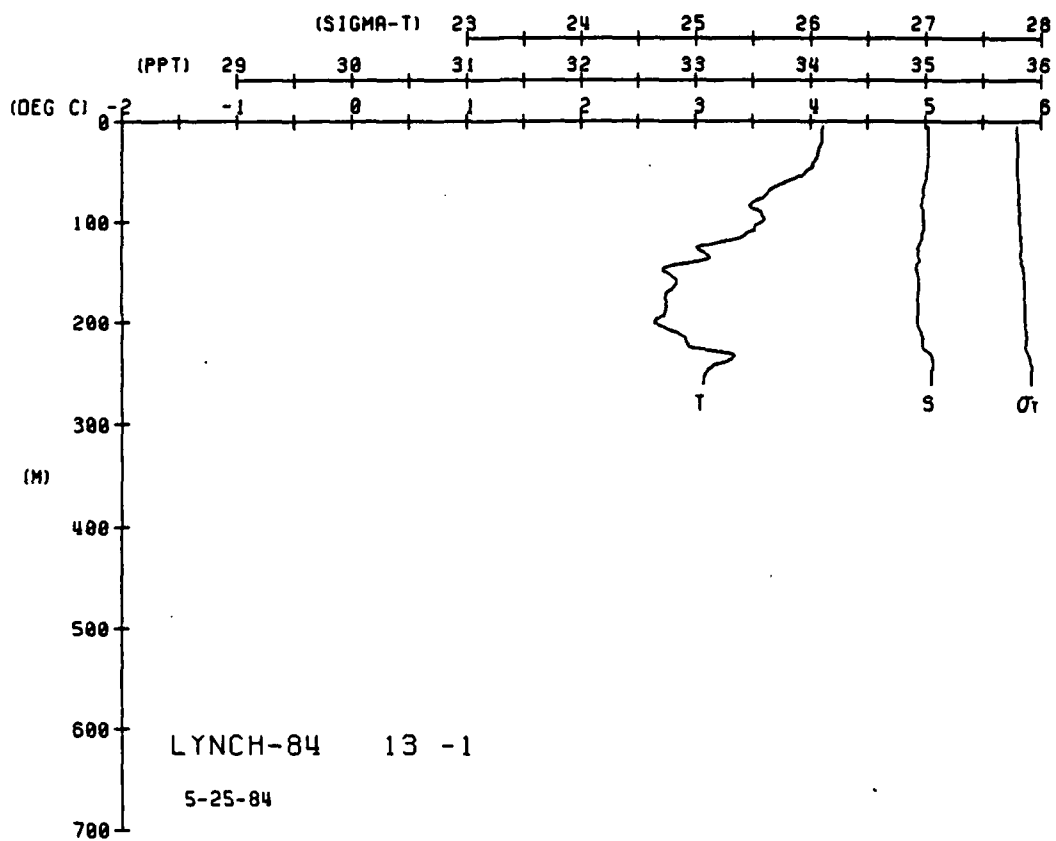
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0.00	0.00	0.00	34.96	22	0.03	9.40	126	1462.50
10.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50
20.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50
30.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50
40.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50
50.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50
60.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50
70.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50
80.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50
90.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50
100.00	0.00	0.00	34.95	22	0.03	9.40	126	1462.50

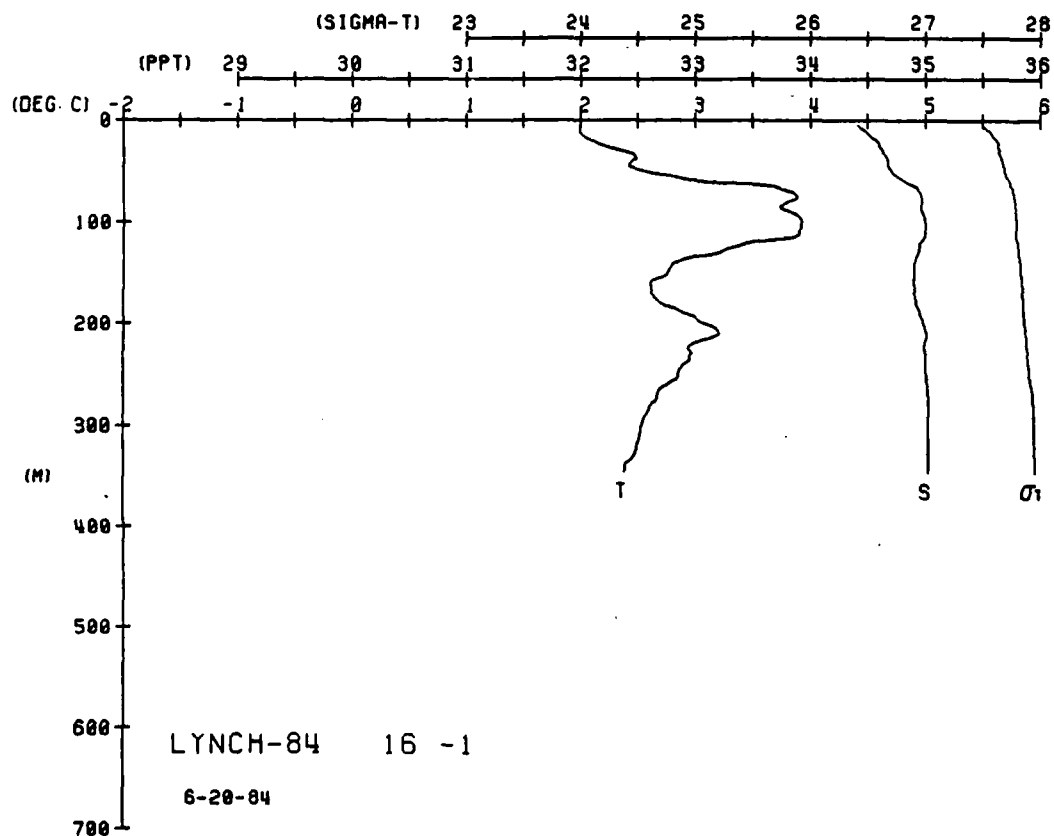
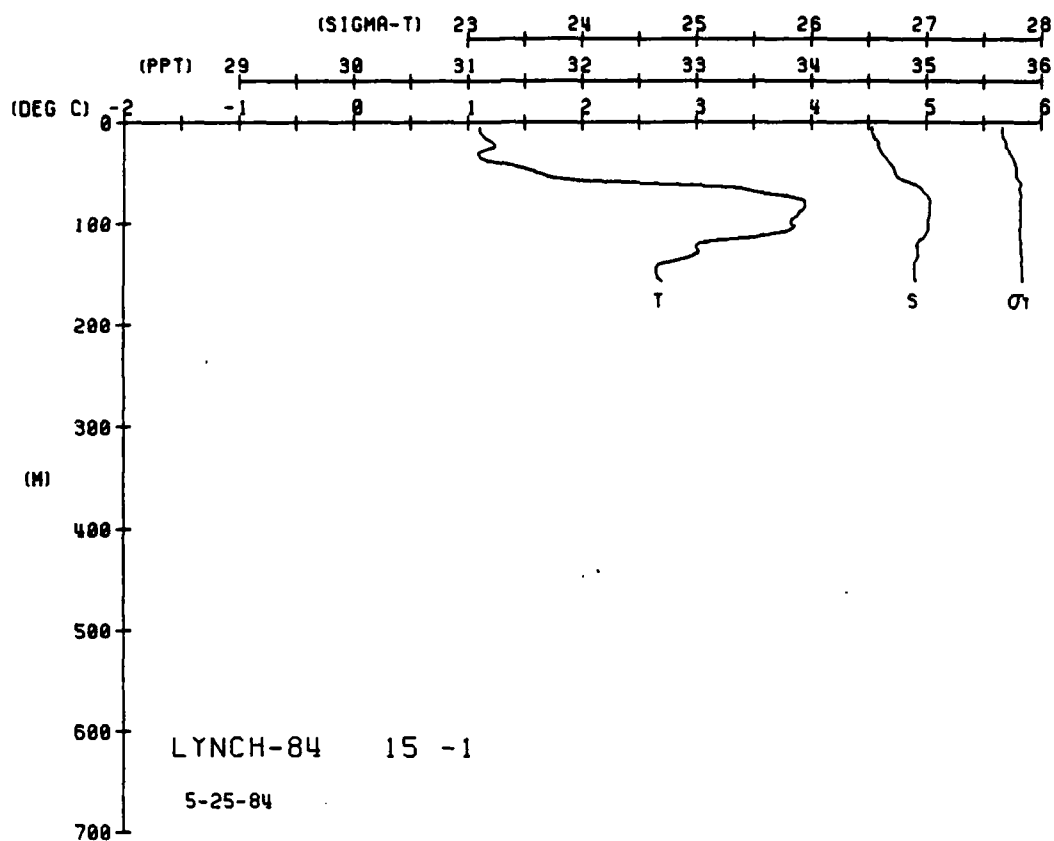


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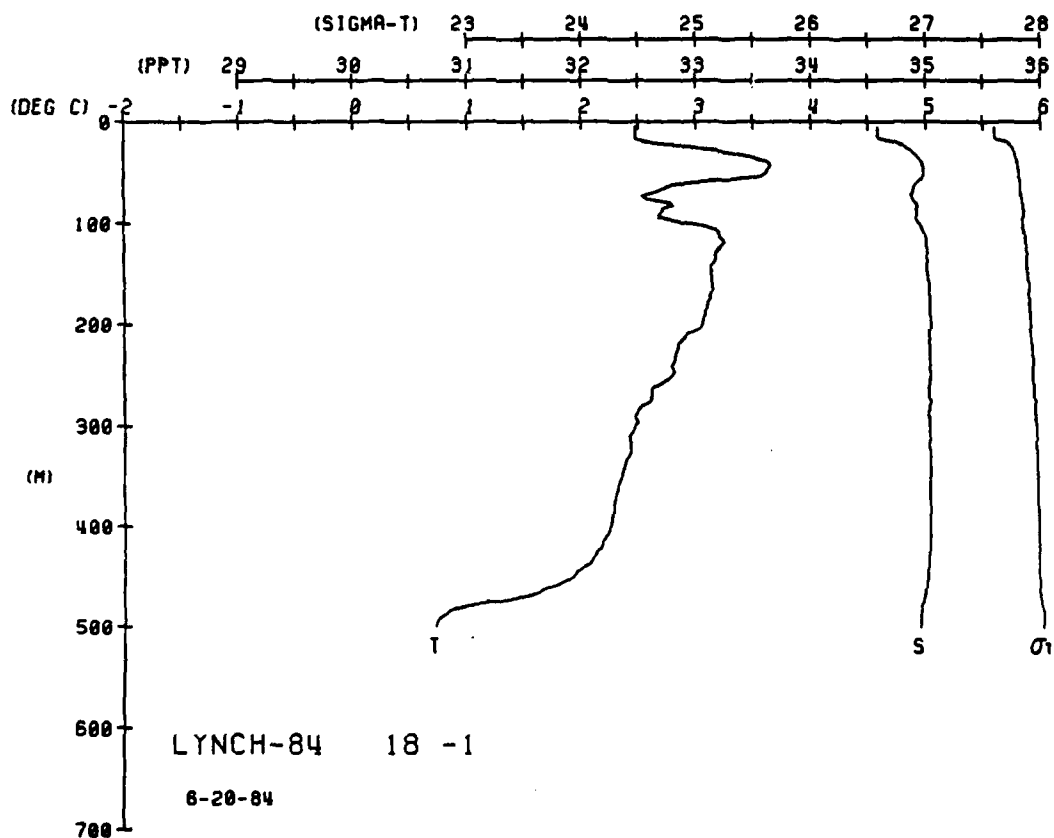
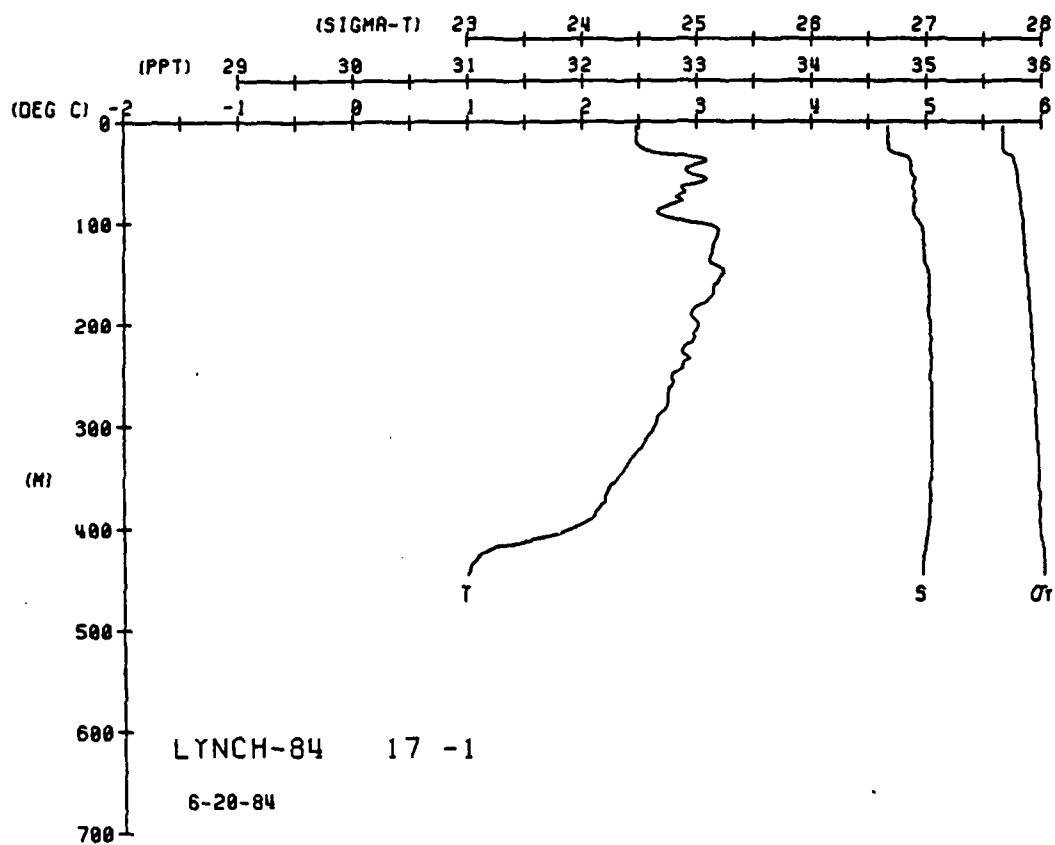
LINCH-04 STATION 13(1) CTD 25/MAY/1984 1250 GMT CODE = 5
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AIR TEMP. = 0.0 BAKGH = 0.0 WIND = 0.0 SPEED = 0.0

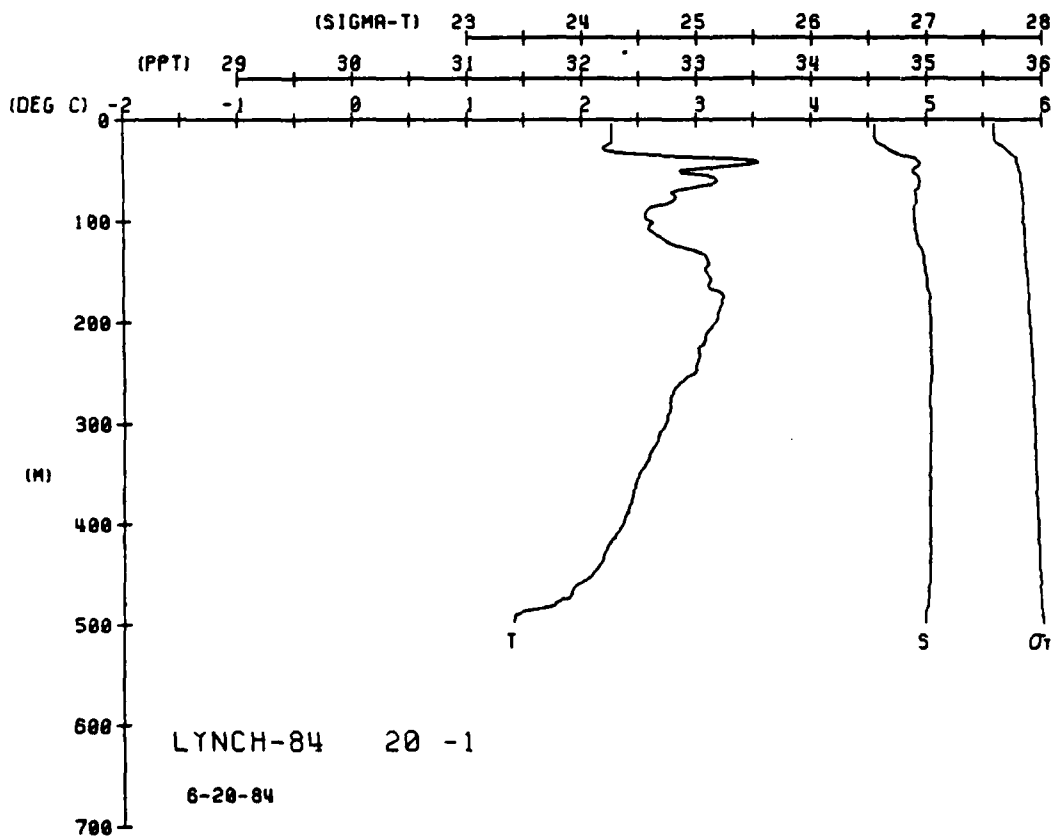
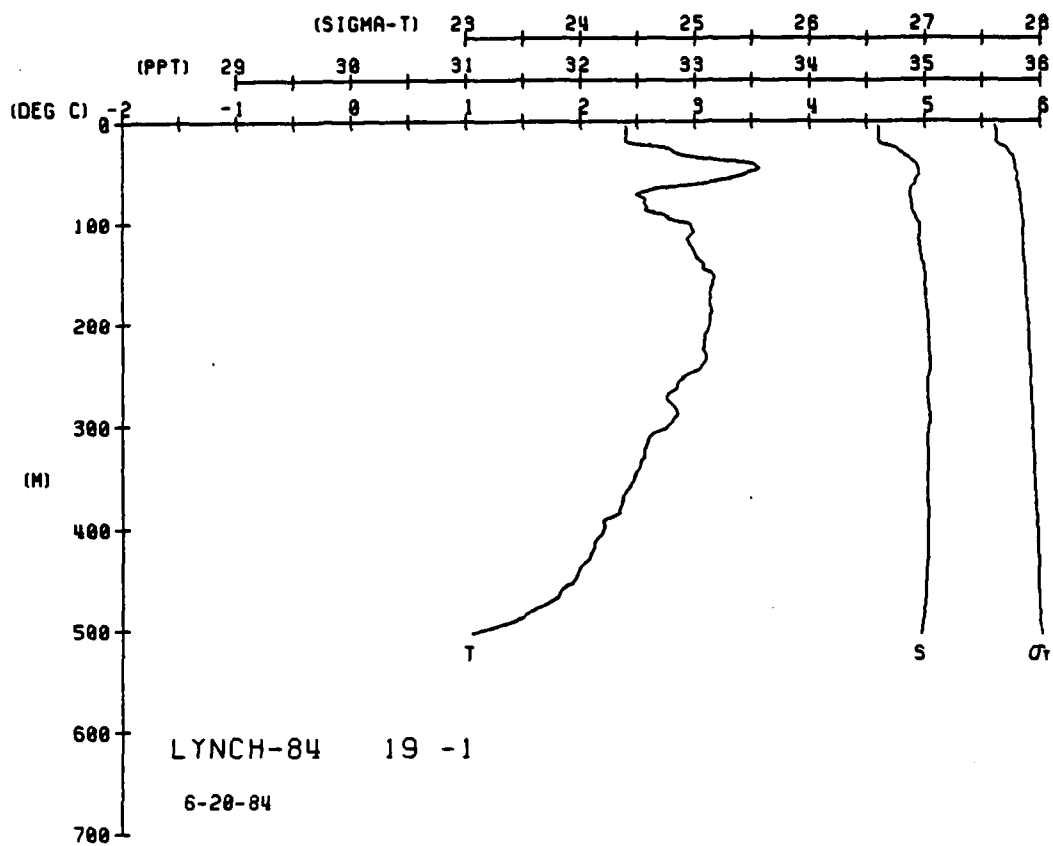
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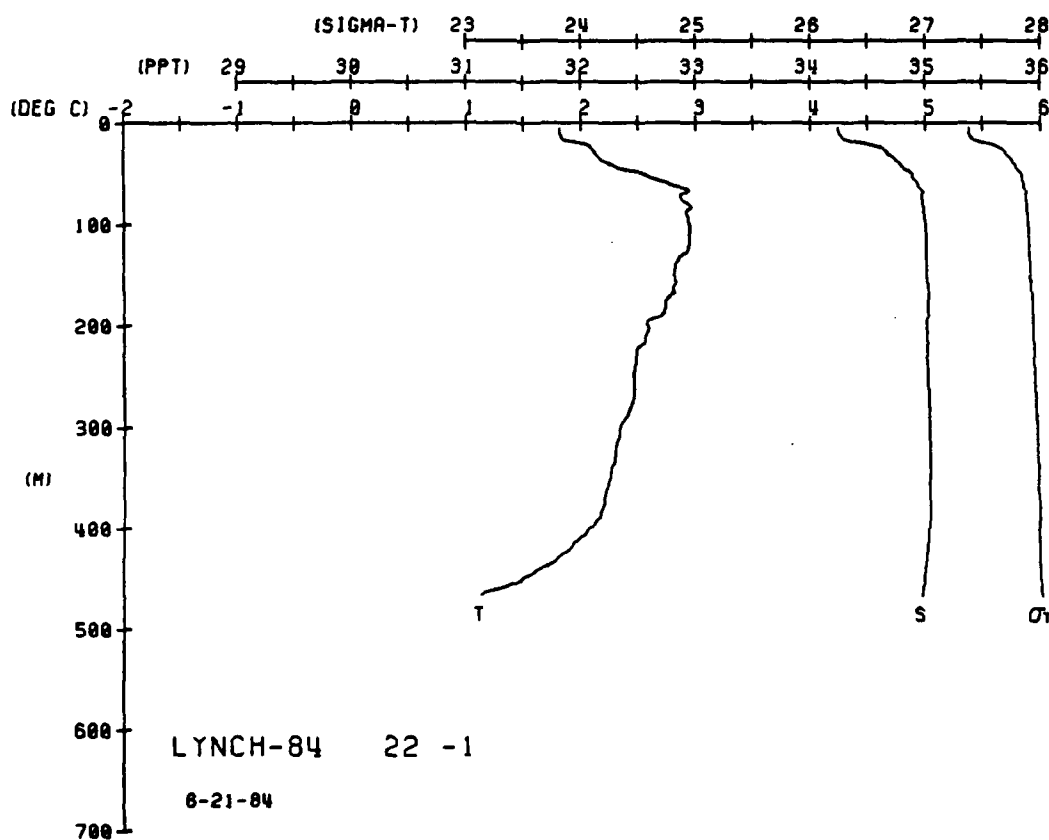
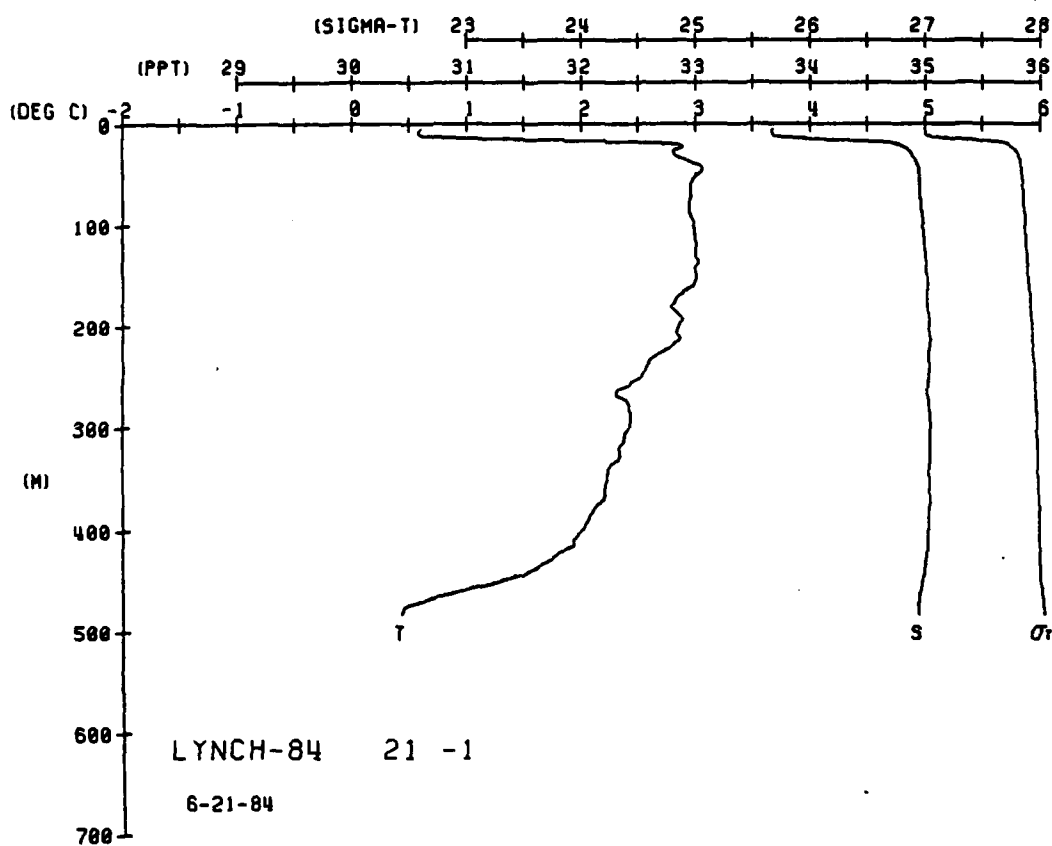


CLYNCH-04 STATION 17(1) CID 20/JUN/1984 1247 GMT CODE = 5
LAT = 79.9083N LNG = 10.2050E LTER = 30. LGTR = 30.
RAIN TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 1.0





LYNCH-84 STATION 21(1) CTD 20/JUN/1984 2306 GMT CODE = 5
LAT = 30.1333N LNG = 0.7667E LTER = 30. LGR = 30.
SACZ = 0.0 SACZM = 0.0 WIND = 0.0 SPEED = 1.0

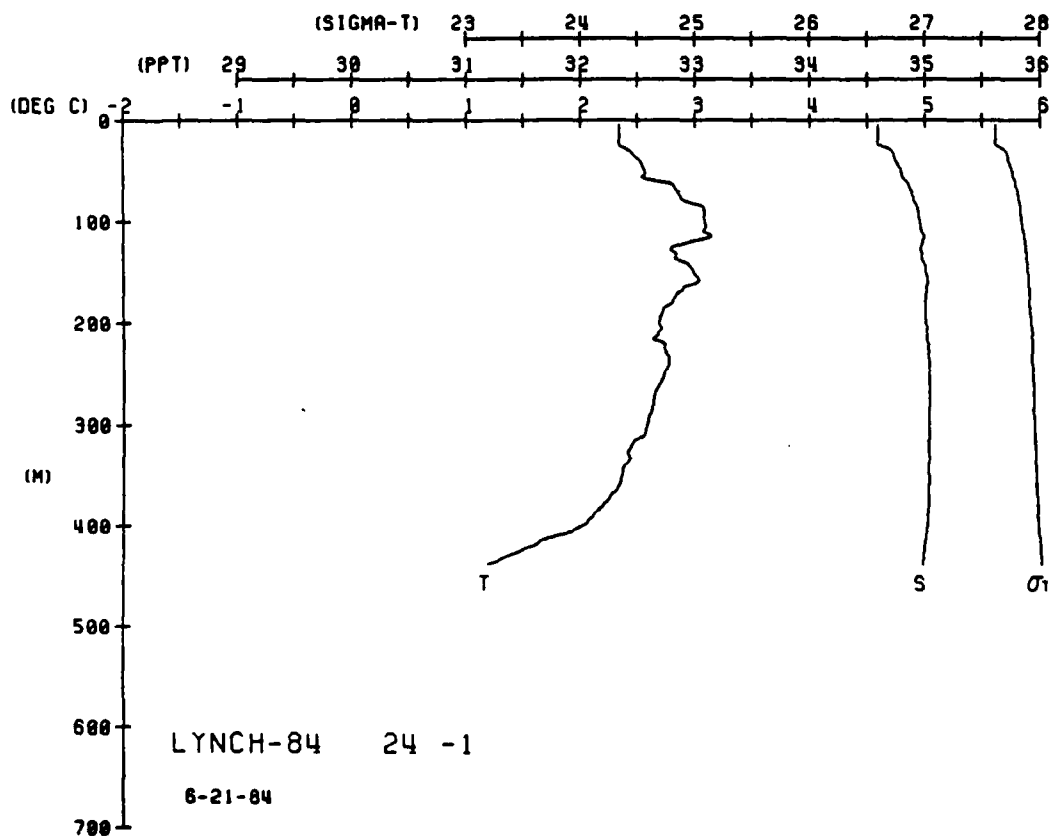
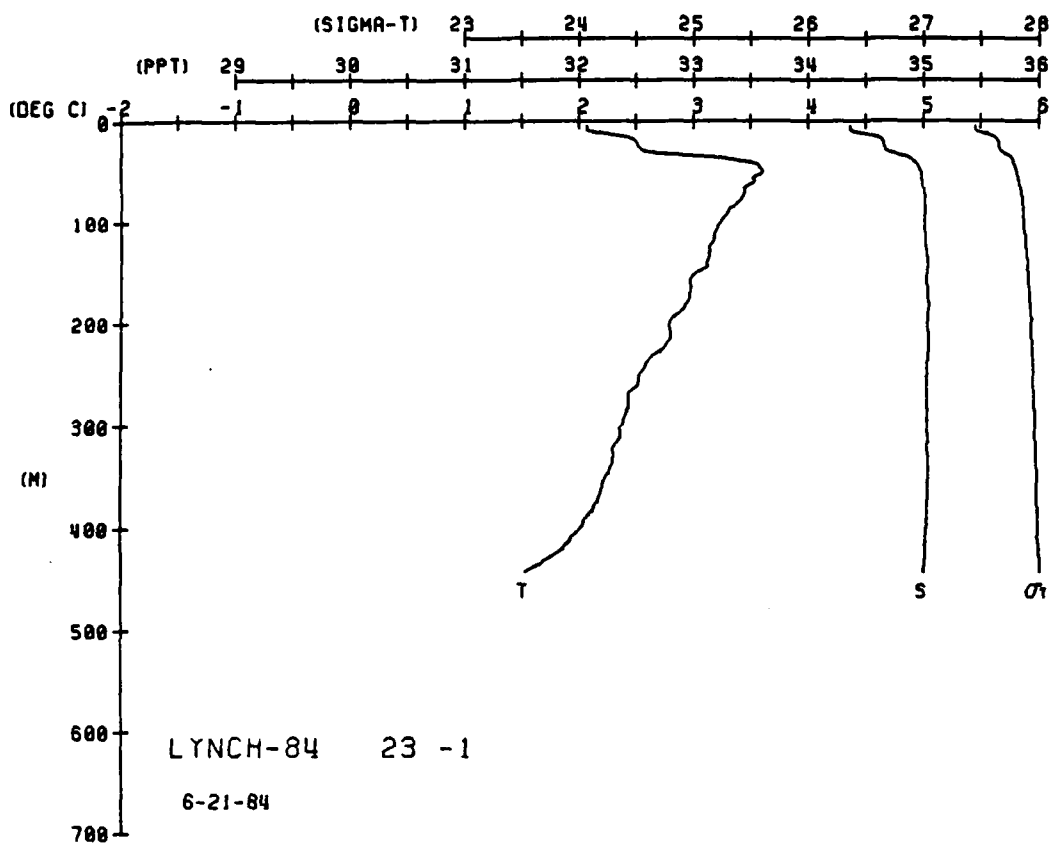


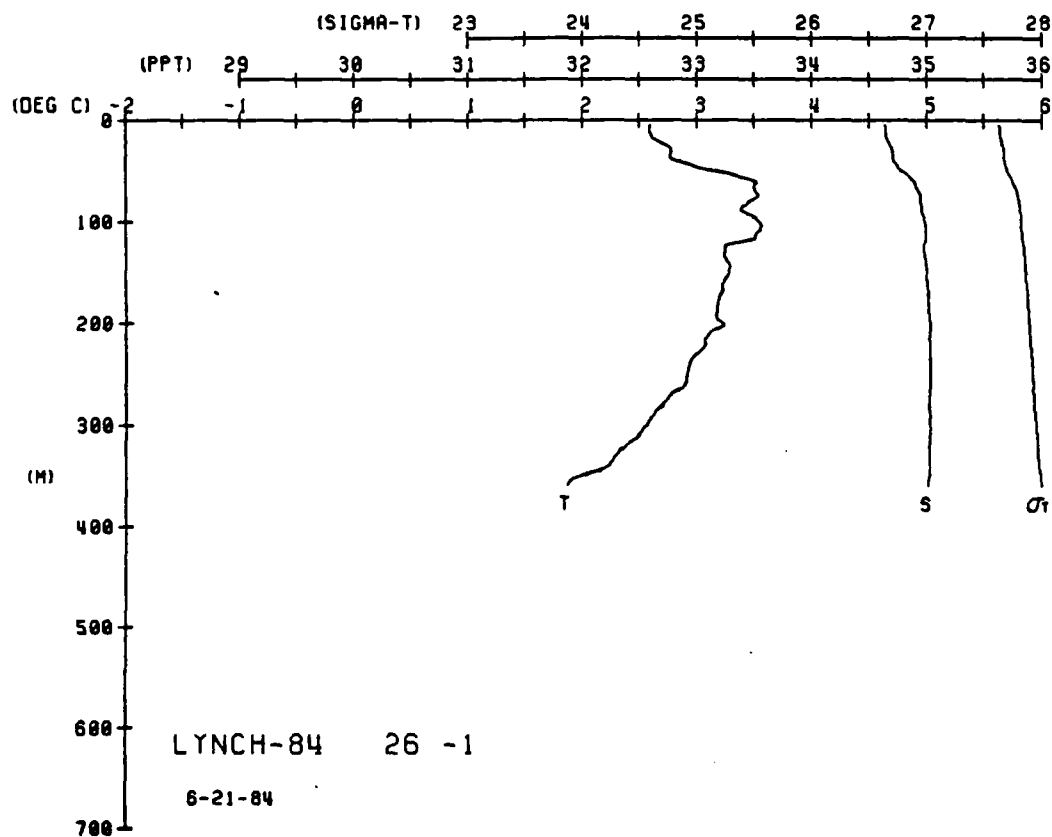
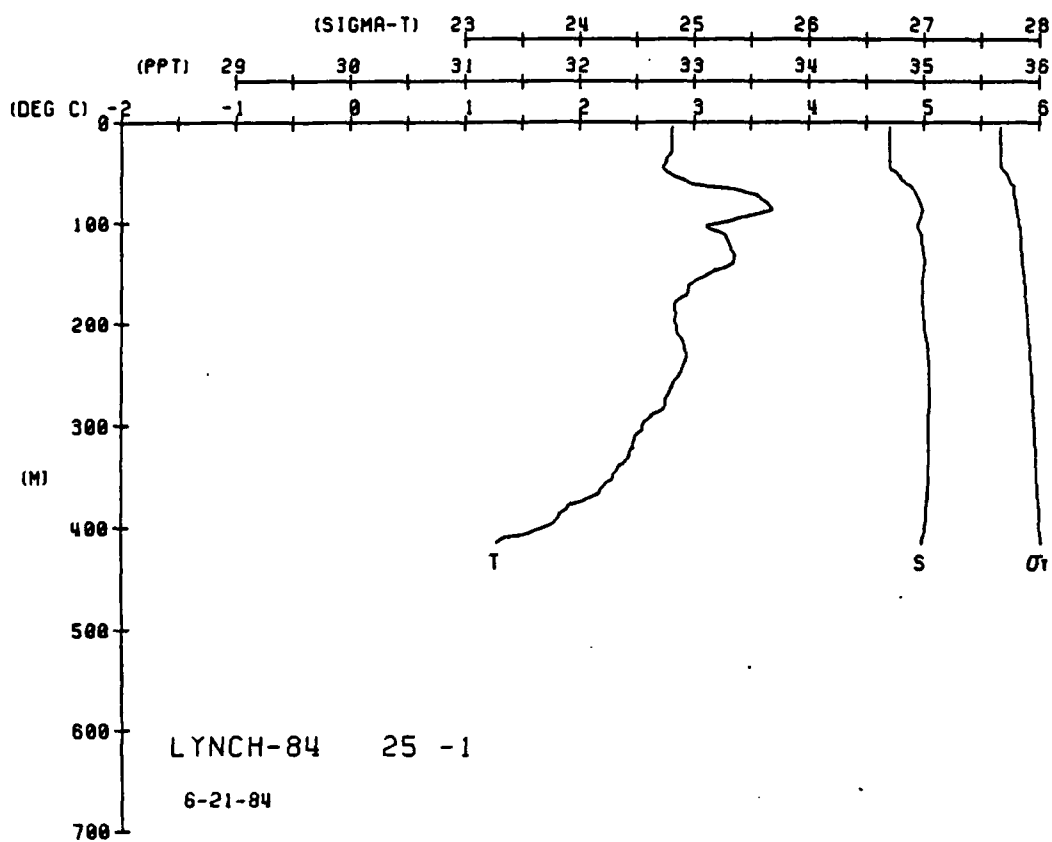
LYNCH-84 STATION 23(1) CTU 21/JUN/1984 237 GMT CODE = 5
LAT = 19.9817N LNC = 9.1405E LTER = 30. LGER = 30.
AIR TEMP = 0.0 BARDN = 0.0 WIND = 0.0 WIND = 0.0 SPEED = 1.0

DEPTH TEMP PTMP SALIN SIG T SPVOL DYNHI SOUND

FROM DTMD SALIM SIG T SPVOI DYNHI SOUND

[illegible][illegible]





BLINCH-04 STATION 25(1) CTD 21/JUN/1984 055 GMT CODE = 5
 LAY = 79.0392N LAG = 9.6968E LTER = 30. LGER = 30.
 MIN TEMP = 0.0 BAROM = 0.0 WIND = 0.0 SPEED = 1.0

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MARGINAL ICE ZONE EXPERIMENT - 1984 PHYSICAL
OCEANOGRAPHY REPORT: USNS LY. (U) LAMONT-DOHERTY
GEOLOGICAL OBSERVATORY PALISADES NY T O HANLEY DEC 85
LDGO-85-7 N00014-84-C-0132 F/G 8/10

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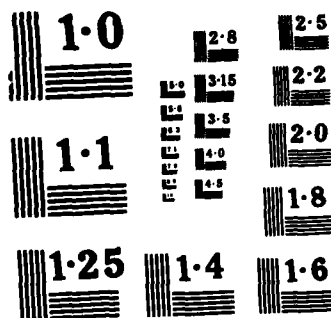
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4. TITLE (and Subtitle) Marginal Ice Zone Experiment - 1984 Physical Oceanography Report: USNS <u>Lynch</u> and Helicopter-Basted STD Data		5. TYPE OF REPORT & PERIOD COVERED Technical
7. AUTHOR(s) T. O. Manley		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Lamont-Doherty Geological Observatory of Columbia University Palisades, New York 10964-0190		8. CONTRACT OR GRANT NUMBER(s) N00014-84-C-0132
11. CONTROLLING OFFICE NAME AND ADDRESS Office of Naval Research Arctic Sciences, Code 1125AR Arlington, VA 22217-5000		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number) MIZEX 84, conductivity, temperature, STD profiles, Fram Strait		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) During the summer of 1984, the Arctic Oceanography Department of Lamont-Doherty Geological Observatory acquired a total of 222 helicopter-based C/STD stations within the ice-covered region of Fram Strait to a nominal depth of 500 m. This program was accomplished as part of an international experiment known as MIZEX East 1984. The two ships used in helicopter operations were the F/S <u>Polarstern</u> and the M/V <u>Polarqueen</u> .		

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The USNS Lynch was also used to obtain 26 CTD stations from two separate legs into Fram Strait. The first leg primarily consisted of an open water transect of the strait at a latitude of 79°N. Stations were typically taken to within 10 m of the bottom and extended from the ice edge onto the shelf of Svalbard. The second leg was more acoustically oriented and confined to the southern region of the Yermak Plateau. During this leg, 11 stations to a nominal depth of 450 m were taken.

Standard level listings of temperature, potential temperature, salinity, sigma-t, specific volume anomaly, dynamic height, and sound velocity are given for each cast along with profiles of temperature, salinity and sigma-t.

This technical report outlines the acquisition and basic reduction techniques of these data.

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